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ABSTRACT

A study investigated the perceptions of vocational education and training (VET) students and teachers from New South Wales, South Australia, and Victoria about ways students engage in learning in VET, practices currently used by VET teachers, and factors shaping learning and teaching in initial VET. Data were collected from the following sources: surveys completed by 113 initial VET students; interviews with 48 teachers; and observations of 37 teaching and learning episodes. Ninety-five percent of the students liked their vocational course, and 52% of teachers believed that students learn best by hands-on learning. Most students (51%) were currently in paid positions. The classroom observers noted that teacher-student interactions were framed in a master-novice relationship. It was concluded that the practical learning component of VET courses must be improved and that initial and inservice education of VET teachers can potentially assist the development of skills that will facilitate the process of learning in initial VET contexts. Additional research on ways of linking classroom/workshop practical learning experiences to the practices and outcomes of workplace learning was recommended. (One hundred eight tables/figures are included. The bibliography lists 34 references. Appended are the teacher and student questionnaires and data on the numbers of students who chose or were placed into VET.) (MN)

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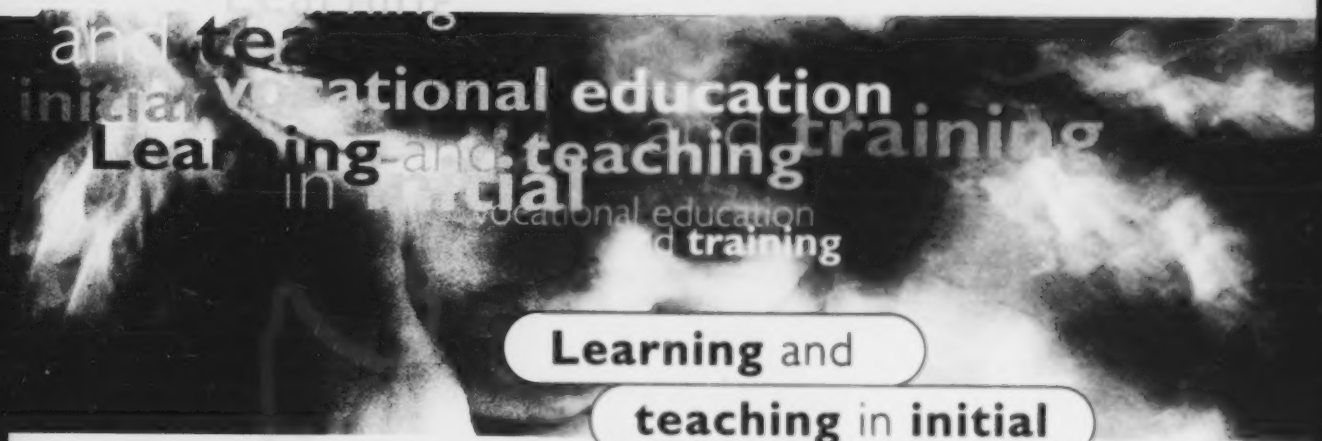

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Learning and teaching in initial vocational education and training

Tony Anderson

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FOR THE READER IN A HURRY

The executive summary gives the main findings and recommendations. Alternatively, the summary of main themes in chapter 4 and the conclusions in chapter 5 may be read.

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Executive summary

AIMS

This study was carried out by the New South Wales Department of Education and Training in collaboration with the Victorian and South Australian technical and further education (TAFE) and school sectors. The aim was to study students' and teachers' perceptions of initial vocational education and training including:

- how students engage in learning in education and training;
- current teaching practices;
- the influences which shape learning and teaching in initial vocational education.

PARTICIPANTS

The study included secondary school students (Year 11 and 12) undertaking school-delivered accredited vocational courses or participating in vocational courses delivered through TAFE, and students in TAFE undertaking TAFE Higher School Certificate (HSC) Pathway courses or entry-level vocational courses. A total of 113 initial vocational education students in TAFE (52 students) and secondary schools (61 students) were interviewed from 48 educational delivery sites in three Australian States: NSW (16 TAFE and 15 school sites), Victoria (five TAFE and four school sites) and South Australia (four TAFE and four school sites). The data include interviews with 48 teachers and observations of 37 teaching and learning episodes.

KEY FINDINGS

How students engage in learning in education and training

- The majority of TAFE and senior secondary school students (95%) liked their vocational course with approval stronger among school students in all States. Students liked the vocational courses/subjects because they gained work skills; they also liked the practical side of the course; the good classroom atmosphere; or the variety of the courses/subjects. Females wanted to get or have a specific job and saw gaining vocational skills as an investment for the future.

- Examination of students' learning preferences showed that a sizeable group of students, 28 per cent, preferred to work mainly with their hands (19% of these were school students) but that most students (67%) preferred to work with both head and hands.

- Students liked teachers who were able to relate to them as an equal and to be friendly (29%); be knowledgeable and have industry experience (27%); have good communication skills; be fair, patient, tolerant and accepting (18%); be able to involve students and make sure they understand; be caring and understanding; and treat students with respect, and as adults.

- Fifteen per cent of students wanted more or better equipment, and seven per cent wanted more or better materials.

- Only half of the students used a library.

Current teaching practices

- The majority of teachers (52%) believe that initial vocational education students learn best by hands-on learning. Teachers identified the importance of teaching vocational content by practical means and finding and adapting to student needs.

- Teachers rated student motivation as follows: high (40%), medium (25%) and low (8%) with 20 per cent of teachers noting that student motivation covers the whole range (low to high).

- Teachers' underlying strategies, based on their accounts of their classroom actions, reveal they were concerned to: keep theory short; use practical approaches; give students something they were interested in; let students choose projects in a fairly free classroom atmosphere, set up activities with the student (competency-based training [CBT]); approach students carefully to gain their confidence; and keep instruction basic. The observations of teaching and learning in the classroom showed that vocational teachers used mixed forms of teaching, of which the main forms were practical work, lecture, demonstration, group work and individual self-paced learning.

- The observations of teaching and learning in the classroom showed that teachers engaged in classroom practices consistent with teaching students who were making the transition into adult life and acquiring elements of vocational skills. The observers classified teachers as: approachable; informal; non-authoritarian; and teacher-directed (mentioned most by the observers); student-centred, friendly and reserved (receiving less mentions); and mainly formal (receiving least mentions).

- There were indications that teaching styles classified as approachable, informal or non-authoritarian, were associated with a higher rating of the course by students (that is, 'very satisfactory', or 'satisfactory').

- Teachers cater for students with learning difficulties by simplifying teaching using step-by-step procedures (23%); providing individual attention and making sure that students understand (19%); giving demonstration and explanation, especially if there are language difficulties (16%).

Influences which shape learning and teaching in initial vocational education

Work placements

- Most students (51%) said they were currently in paid employment and included the following coding categories: general paid work, not retail or food (21%), retail (16%) and food (12%). One-quarter of the students said the course was assisting them in the workplace. Nineteen per cent said that the course was not assisting them in the workplace, of these ten per cent were school students. It is not known if the part-time work of these students was related to their course/subject.

- Forty-nine per cent of students had undertaken work placements. Benefits gained from the workplace were: the acquisition of people skills (35%); vocational skills (32%); and confidence and self-esteem (27%). Students found the workplace more 'hands-on' (11%); 'in the real world' (5%); 'more pressured' (4%); giving more responsibility and variety (3% each). Students noted that the main form of learning in the workplace was through explanation or demonstration accompanied by watching that the work was done correctly (16%).

- The classroom observers noted that teacher–student interactions were framed in a master–novice relationship. Observers also characterised 41 per cent of the teaching and learning episodes as 'bi-directional' (meaning that students and teachers shaped each other's behaviour). There were indications that students gave a higher rating of their course when the teacher–student interactions were classified by the observers as 'bi-directional'. These observations suggest that students expect to be in a master–novice relationship and that teaching is most effective when teachers have mastery of the subject while at the same time being approachable, informal, understanding, and treat students respectfully in an adult way.

- Problems with course design reported by teachers were: lack of information on the desired outcomes of the course; the theory on occupational health and safety (OH&S); difficulty in devising activities to meet learning outcomes and lack of time or physical resources, facilities or tools. About half of the teachers mentioned difficulties with how the syllabus was delivered, including the impracticality of many assessments; difficulty with time and free periods; and the need to make work experience longer. Slightly more than half of the teachers said the equipment was not sufficient for the course. The resources which teachers required included equipment (in some cases new equipment), space, resources/materials, increased computer access and more support with equipment.

- Most teachers (75%) have changed their vocational teaching approach in recent years, as follows: 21 per cent have noted the need to be more practical but to teach theory as well; 12 per cent of teachers now regard themselves as a facilitator; eight per cent note that their approach is different due to the introduction of competency-based training and assessment which was approved by 58 per cent of teachers. (The approval of CBT, deleting missing responses, was 82%).

IMPLICATIONS OF THE KEY FINDINGS

1. The study identified the importance of further improving the practical learning component of vocational courses, particularly through carefully selected practical experiences which impart the important concepts from which vocational competence is formed. There is a need to improve the level of resources to support curriculum development of this kind, to provide the necessary support for equipment and materials and to ensure that teachers have technical competence and relevant industry experience.

2. Initial and in-service education for teachers of vocational education and training has the potential to assist the development of skills which will facilitate the processes of learning in initial vocational contexts. Among these skills are the ability to develop and use practical forms of learning; the ability to be flexible in catering for a variety of learning needs and preferences; and the adoption of informality of style and respectful classroom relationships. This is the approach most likely to coincide with expressed student needs.

3. If further research in this area is undertaken, consideration should be given to ways of linking classroom/workshop practical learning experiences to the practices and outcomes of workplace learning.

Overview of the report

The first chapter describes the project as encompassing two elements: firstly examining how students learn, and secondly how teachers teach initial vocational education and training (VET) in secondary schools and technical and further education (TAFE).

The report is organised around the research questions. These are used to organise the literature review in chapter 2, and the presentation of results in chapter 3. In the literature review particular use is made of a study by Crump et al. (1997) which examined the learning needs and teaching approaches for students in initial vocational education characterised by educational disadvantage. This study was important in shaping the present study.

Since the study reported here was the first major empirical exploration of initial vocational education in secondary schools and TAFE in Australia, a relatively complex research design was adopted. This called for observation of teaching and learning episodes and then interviews separately with some students engaged in that episode and with the teacher. This meant that students' purposes in undertaking vocational courses and their learning needs and opinions of their courses/subjects, as revealed by interview, could be viewed in the light of:

- what the classroom observations revealed about student actions and the student–teacher relationship;
- teachers' perceptions of their students and their accounts of the teaching strategies they used.

The results of that empirical work are presented in chapter 3. Unfortunately all social science studies suffer from missing data and this study is no exception. Moreover, the reader, in considering the observational data, needs to bear in mind that an observer was present when the data were collected. This is likely to have had some effect on the research participants, probably in the direction of encouraging a response to be 'attentive' and task focussed. It should be noted that the secondary school students in the study were very young students and not representative of mainstream TAFE students, even at entry level. The results are organised around the research questions. Summaries of the findings relating to each research question are included at the end of the relevant section of the results. Because the presentation of results is somewhat dense with tabular data, a general summary of the main data themes is given in chapter 4. This chapter also provides discussion of the main findings.

Chapter 5 gives the conclusions from the study.

The questionnaires are included in the appendices.

1. Project description

1.1 Aims and research questions

The project aims to examine:

- how students engage in learning in initial VET;
- current teaching practices;
- the influences which shape learning and teaching in vocational education and training.

The research questions were:

1. What do students say about how they learn in initial VET?
2. What interpretations do students place on specific learning activities?
3. What are the significant features of the learning environments in which students experience initial vocational education?
4. What are the main teaching strategies currently being used in initial vocational education?
5. What assumptions do teachers make about how students learn?
6. What determines the strategies being used by teachers?
7. What influence does the workplace have on teaching and learning?

1.2 Vocational areas studied

These are listed below.

Industry areas in the following groups:

- building and construction; metals and engineering; electronics, design and furnishing
- hospitality; tourism;
- retail; office accounting;
- welfare; child care.

Note: There are no NSW school-delivered courses in category: 'welfare, child care.' In NSW, 'furnishing' includes two courses roughly equating to furniture framing and to upholstery.

Courses/study areas of the following types:

- students undertaking school-delivered, accredited vocational courses;
- school students participating in vocational courses delivered through the TAFE system, for example, joint secondary schools/TAFE (JSSTAFE) courses in NSW;
- students in TAFE undertaking courses aimed at university entry which also have a vocational component (for example, the TAFE Higher School Certificate [HSC] Pathway);
- students in entry-level vocational training in TAFE.

Students in NSW can undertake their HSC in school or at TAFE. They can take up to five years to complete the HSC, although the usual period for completion is two years.

At the time of this research the following vocational options are available to students in NSW who are undertaking their HSC.

Courses for TAFE students

- Higher School Certificate (Certificate in Matriculation) Course No: 8967.
  This includes the TAFE HSC Pathway which has six specialist areas: microcomputing; design; tourism and guest services; horticulture; child studies; rural studies;
- Tertiary Preparation Certificate Course No: 8946;
- TAFE students can also participate in a JSSTAFE course (see below).

Courses for secondary school students

- JSSTAFE courses.[1]
  These courses enable HSC students enrolled in a school to study mainstream TAFE courses while completing their HSC at school. Students can study JSSTAFE courses as preliminary or HSC year courses or both. The courses can be one unit over one year (about 60 hours), two units over one year or one unit over two years (about 120 hours) or two units over two years (about 240 hours). Two types of courses are available:
  - Board-endorsed JSSTAFE courses available for senior school students (or as school courses for students in Year 10). These courses are recorded on the HSC record of achievement but do not contribute to the tertiary entrance rank (TER);
  - Board-developed JSSTAFE courses which are recorded on the HSC record of achievement and count towards the TER.

  There are three Board-developed JSSTAFE courses: Certificate in Accounting; Certificate in Electronics Technology; Certificate in Tourism Sector Services.
- School-delivered vocational courses are available in seven areas: building construction, retail,office, hospitality, electronics and furnishing. These courses are recorded on the HSC record of achievement but do not contribute to the TER.
- Industry studies is a school-delivered vocational course with strands in metals and engineering, hospitality, and retail. The course is recorded on the HSC record of achievement and contributes to the TER.

1.3 Research design and sample selection

The research design called for observation of teaching and learning episodes in classrooms where initial VET was being taught. Subsequently, separate interviews of a number of students from the class and with the teacher were undertaken. The research sites covered New South Wales, Victoria and South Australia and were chosen to reflect low, low-rural, and medium socio-economic status (SES) groupings.

The major portion of the fieldwork for the study was carried out in NSW. Sampling of the research sites for the study aimed to reflect the diversity of initial VET in schools and in the TAFE system. The localities of the vocational education providers to be included in the study were chosen by the researchers to reflect low, and low-rural, socio-economic status locations, as well as middle socio-economic status localities. The original proposal was to include the following number of case studies: 32 in NSW (16 DSE, 16 TAFE); ten in Victoria, and ten in South Australia. The achieved sample was slightly less than this (see table 3.2.1). In the selection of the research sites the aim was

[1] *TAFE GAZETTE, 31 July 1996.*

to select case studies where it was possible to observe a classroom teaching and learning episode. This was in preference to situations where only the teacher and students could be interviewed. Rural sites were included and in Victoria and South Australia. The aim was to match the TAFE and school sites as follows:

Pair 1: School and TAFE sites for low socio-economic status urban.
Pair 2: School and TAFE sites for high non-English-speaking background (NESB).
Pair 3: School and TAFE sites for the classification 'rural/isolated'.

The sample matrix is given in tables 1.1–1.3 below.

Table 1.1: Sample for TAFE NSW

	Socio-economic status (SES)		
SAMPLE (Aim: 16 sites)	**Medium SES urban**	**Low SES urban**	**Middle/Low SES, Rural**
JSSTAFE (n=6)	Tourism & hospitality JSSTAFE Electronics JSSTAFE Practice A	Office: JSSTAFE Welfare: JSSTAFE Child care	Building and construction JSSTAFE Metals and engineering JSSTAFE
TAFE HSC Pathway (n=4)	HSC Pathway: Tourism & guest services HSC Pathway: Information technology	HSC Pathway: Child studies	HSC Pathway: Horticulture
Initial vocational education (n=6)	Tourism & hospitality, and Office admin & financial skills	Engineering production, Building & construction, and Furnishing	Course: Child care

Table 1.2: Sample for Victoria and South Australia for TAFE and schools

	SES		
SAMPLE (Aim: 10 sites)	**Medium SES urban**	**Low SES urban**	**Middle/Low SES, Rural**
VIC SCHOOL	Office	Hospitality and Rural studies	Course: Office
VIC TAFE	Engineering (welding); Hospitality	Welding and Accounting	Course: Electronics
SA SCHOOL	Furnishing and Wet trades	Course: Hospitality	Child care, Automotive
SA TAFE	Tourism and hospitality	Course: Building & construction	Office, Engineering (welding)

Table 1.3: Sample for school-delivered courses in secondary schools in NSW

	SES		
SAMPLE (Aim:16 sites)	**Medium SES urban**	**Low SES urban**	**Middle/Low SES Rural**
Select 13 Content-endorsed courses (CEC), 3 Industry studies (IS) courses. Make 1 site rural	Courses: CEC Building CEC Furnishing IS Hospitality CEC Office skills CEC Office skills CEC Retail IS Metals	Courses: CEC Building CEC Furnishing CEC Hospitality CEC Office skills CEC Retail CEC Electronics (unavailable, another course was substituted)	Courses: CEC Hospitality IS Retail CEC Rural at a rural school

1.4 Research protocol

Permission was obtained from senior personnel to carry out the study and letters of introduction were sent out to participants outlining the purpose of the research and giving contact names if needed. This protocol was intended to recognise the levels of management responsibility and to ensure that site-level visits were arranged to facilitate efficient and friendly contact. No contact was made with research sites before formal permission had been given at the local level.

1.5 Data analysis

The student interviews were conducted as group interviews and, with the permission of students, were tape-recorded. Interviews with teachers were also tape-recorded with their permission. The tapes were later transcribed. Data were analysed using the SAS statistical package.

1.6 Project management and staffing

The project was managed by the Curriculum Design and Evaluation Services Unit, New South Wales Department of Education and Training.

The project reference committee comprised:
Michael Kimberley, Board of Studies, Victoria
Chris Harrison, Department for Employment, Training and Further Education, South Australia
Anne Murphy, Federation of School and Community Organisations (FOSCO), Sydney
John Quick, Manufacturing, Engineering and Related Services ITAB, Sydney
Gary Johnston, Department of Education and Training, Sydney
Neville Warner, Department of Education and Training, Sydney
Chris Currey, Department of Education and Training, Sydney
Linda Simon, NSW Teachers Federation, Sydney
Dr Tony Koop, Macquarie University, North Ryde.
The project officers were Dr Tony Anderson, Marilyn Davies and Helen Nicholas, NSW Department of Education and Training.

2. Literature review

2.1 Introduction

Factors driving the renewed interest in vocational education in schools include the realisation that the traditional academic disciplines do not meet the personal and career path needs of an increasing number of post-compulsory students who are not seeking university entry. In addition, there has been a decline in the quality and quantity of young people seeking to enter the trades (Marshman 1996) and a decline in low skilled jobs which used to absorb a majority of early school leavers (Smith 1997).

The renewed interest in vocational education in schools is taking place within an emerging policy debate about training reform which includes questions as to whether competency-based training (CBT) captures the complexity and dispositional aspects of vocational education; debate about the location of standards 'within industry' which does not acknowledge sufficiently the needs of enterprises, regions and communities; and perceived limitations to the market approach to training reform (Keating 1997).

For the individual, the choice of a career is becoming more difficult. Indeed, the transition from school to work and the process of becoming an adult is increasingly a negotiated complex reality and the transitions after high school do not form a predetermined and predictable sequence from one discrete type of reality to another Dwyer (1997). Views of how work will be performed in the future include the following possibilities:

- increase in the number of part-time, temporary, and contract workers;
- increase in telecommuting, or working at non-traditional work sites such as satellite offices;
- growth of the technical workforce with, for example, lab technician, computer professionals, drafters, paralegals, medical technicians, engineers and operators tending/programming high tech production machines/processes;
- increase in the use of self-led, flexible response teams in a context where more work will address problems related to niche markets with non-core business outsourced and strategic alliances pursued to gain a competitive edge.

2.2 Review of the literature relating to the research questions

Research question 1. What do students say about how they learn in initial vocational education and training?

In Australia, the learning preferences of initial vocational education students in TAFE characterised by being educationally disadvantaged were identified by Crump et al. (1997).

> *The results show that mixed together in TAFE courses are students from low socio-economic status backgrounds, with widely different knowledge, some in transition from school to work or with varying amounts of work experience, different motivation, language and numeracy levels, and consequently, different learning needs. This reflects a student body of considerable diversity and educational difference/disadvantage. The study gives an understanding of the*

learning preferences of these students and highlights the central role of vocational teachers and the sophisticated work they do in accommodating curriculum to their learning needs (Crump et al. 1997).

Commenting on the characteristics of the Australian school student population Turney et al. (1993, p.5) note that there are more varied cultures and backgrounds throughout any particular school than in the past; senior classes are likely to contain some students whose motivation is questionable; and ordinary classes may well include students with disabilities. These authors note that in rural communities there are lower levels of participation and aspiration for further education, due to lack of access to educational facilities.

Crump et al. (1997) concluded that the design of curriculum and the forms of curriculum delivery must take account of the widely differing needs of students; in particular, the wide difference in students' literacy and numeracy levels, the different ways in which students prefer to learn, and the ways in which they interact with other learners and their teachers or trainers. Moreover, the capacity to respond to the needs of disadvantaged students was identified as a core skill for TAFE teachers. In relation to teacher training, the study recommended that initial training for TAFE teachers should include study of diversity/equity issues in the light of the known social composition of the TAFE student body. In relation to CBT, the study concluded that these programs should recognise the key role of skilful and flexible teaching in applying CBT to the specific needs of disadvantaged students, with the provision of adequate preparation time and support.

The study by Crump et al. (1997) supported a number of theoretical constructs which were included in the review of research on teaching and learning in classrooms by Cooper and McIntyre (1995). These are summarised below.

- Success in teaching seems to depend on the extent to which teachers effectively *integrate* their knowledge of students with other knowledge such as subject content/ curriculum requirements, and different possible ways of giving students access to this knowledge.
- When teachers and students are operating in classroom situations they are engaged in the process of individual, *active sense making* (citing Clark 1986) in which student *affective states* are important to learning. *Active sense making* influences the opportunities students perceive for action and the actions that they take. At the same time their perceptions are influenced by their personal and culturally grounded goals and purposes. Crump et al. (1997) identified the role of teachers in responding to the cultural backgrounds of learners as increasingly important in understanding teaching and learning processes. This requires an understanding of social class, ethnicity and gender effects in classrooms, gender effects in vocational courses being most noticeable when traditional gender demarcations are crossed such as when males enter nursing, or females enter trades such as building and construction.
- Cooper and McIntyre (1995) point out that learning entails a complex *interweaving of language, interaction and cognition* (referring to a model proposed by Bruner and Haste, 1987). In this model, learning involves the *sharing and testing of meanings* and the *negotiation of interpretations* through interaction and the exercise of empathy. *Scaffolding* describes the process whereby the teacher provides model structures which enable the student to apply existing skills in new ways in acquiring knowledge. These concepts, as the Crump et al. (1997) study showed, provide a way of construing the nature of a master–novice relationship in vocational learning as a skilled teaching process in which useful frameworks or guides are provided to the student without the teacher seeming to be authoritarian or overly formal in the teacher–student interaction.

- Teachers' strategies and behaviours influence their students, and *vice versa* (citing Shavelson et al. 1986, on the concept of '*bi-directionality*'). This concept appears to be linked to several other concepts discussed by Cooper and McIntyre (1995). These include the strong sense that both teachers and learners see effective teaching and learning as *'transactional'* processes (citing Vygotsky 1987; Bruner 1987) and *'calibration'* by which teachers and learners test and adjust their understandings against those held by one another.

Crump et al. (1997) provide a model of teacher–student interaction derived from content analysis of interviews with students and teachers (a total of 157 students and teachers were included in the study). The model reproduced in figure 2.1 illustrates the move beyond the metaphor of 'delivering' training towards a notion of facilitating learning as a co-operative process. As Connell (1995) has suggested, curriculum documentation and assessment requirements provide a framework within which the detailed specification and joint labour process of students and teachers proceed.

The concept of bi-directionality—empathy in the teacher–student relationship—is reflected in figure 2.1 in the expression of student learning preferences and teachers' espoused teaching approaches. Figure 2.1 shows that teaching and learning is a process of co-production with students, meaning that the teacher and the student together create the learning outcome for the student. It is important for teachers to weave specific learning activities appropriately into the curriculum allowing for students' learning preferences such as the preference to be motivated, challenged, to hear clear explanations, to have time to learn step by step, at their own pace, in classroom relationships that are respectful and adult (Crump et al. 1997). The study gives an insight into the sophistication of teachers' work. A policy implication of the model (figure 2.1) for educational planning is that, for educationally disadvantaged students especially, to remove or reduce the role of the teacher will likely damage the achievement of learning outcomes.

The model (figure 2.1) reflects elements of what Hill (1994) calls a pragmatic philosophy of teaching. Pragmatic teachers, according to Hill (1994) are flexible in their methods, and focus on action-based education using problem-solving, experimentation and a project approach as critical teaching strategies. Vocational education could better meet present and future education needs of students with a move away from teacher-focussed curricula models ... to more student-centred curricula (Hill 1994).

Figure 2.1 also reflects some other perspectives on how students learn, summarised from Crump et al. (1997) as follows:

- The preferred learning style of students in TAFE differs from many students in higher education with its emphasis on integrated theory and demonstration and practical instruction (O'Neill 1993). (See also the comments by Harris et al. 1995, p.146 in relation to teaching effectively in CBT programs summarised under research question 6, below).
- There is some evidence to suggest that outcomes are more successful when delivery of instruction matches student learning styles (Misko 1994). Two basic approaches to learning were identified by Misko (1994). The first was an empirical approach where students prefer to learn using a step-by-step, analytical, concrete-experience method with more attention to the details than to what the details mean and how they fit into the big picture. The second was a conceptual approach to learning which is more intuitive and abstract with attention more on the big picture.

STUDENTS' LEARNING PREFERENCES
TEACHING APPROACHES
Show enthusiasm.
Be adaptable, flexible, friendly, positive. Help students gain self-esteem. Get students started. Get their trust.
Show an interest in me, listen to me.
Understand students' needs, get inside their heads, know their literacy, numeracy needs.
Motivate me, challenge me.
Relate to students, get on their level, put things in a way students understand.
Give clear instructions. Don't give work without explanation. Know how to put abstract concepts across. Don't be vague.
Motivate the class, build on students' capabilities
Explain what is required to pass.
Show how to do it step by step. Sequence learning to make learning easier. Let me have hands-on practical work and plenty of practice.
Give clear explanations, show how it is done, use demonstration, then exercises, provide models. Know how to structure learning and make learning interesting and fun.
Make the class interesting, and learning enjoyable.
Be skilled, experienced, know what you are talking about. Maintain industry relevance.
Vary the teaching, have class activities, video, field trips, small groups, teams.
Vary the teaching approaches when students look bored, or need motivation, or when dealing with differences in culture, age, and experience, or when body language signals need for a change.
Let me work at my pace, don't hurry me, don't jump steps, I must link theory and work in my mind.
Use group work, role-play, practical work, video, field practice, debate. Encourage collaborative work.
It helps me to remember.
Use practical hands-on learning linked to theory, (cover the basic principles), do continual repetition of tasks to increase skill. Vary the pace of teaching.
Make assistance available to students.
Manage the classroom, keep bright students busy, have reasonable discipline, be impartial not strict.
Don't be too strict, punitive, contemptuous of learning. Don't pick on me, ask me why I don't understand, or make me feel out of place.
Use tutorial support and counsellors when needed.
Follow the syllabus but vary it when you have to.
Improve assessment, make it fair, reasonable, relevant, not crowded, no vague questions, no variation between markers.
STUDENT GAINS
When I learn new skills, do/make interesting things, see the end product, better myself, gain understanding, gain confidence, gain praise, feel great, pass exams, get good grades, know the answers.

Figure 2.1: Two sides of the same coin: Learners' preferences and teaching approaches

The literature on the psychology of learning was examined by Ediger (1996) who concluded that vocational education: activities should:

- be meaningful and understandable to learners;
- stress purpose or reasons for student learning;
- guide students to attain significant goals and objectives;
- emphasise the basics in vocational education;
- be interesting in ongoing lessons.

Ediger's (1996) examination of the philosophy of learning led him to reach the following conclusions about vocational education:

- the philosophies to stress in vocational education include a project method with much student involvement in planning;
- a problem-solving procedure involving lifelike problems;
- the provision of predetermined, measurably stated objectives for student achievement.

Research question 2. How can student learning be improved through practical work which conveys vocational skills?

The question of how to improve student learning through practical work which aims to convey vocational skills was addressed by Evans and Butler (1992a, 1992b). They noted a lack of research on how experts perform skilled manual tasks. In consequence, there was little research showing how knowledge of the differences between experts and novices was used when designing curriculum to improve learning.

The approach to this question taken by Evans and Butler (1992a) entailed developing expert models of skilled action. They chose two examples of expert manual performance: welding, and electrical installation procedures. The model for electrical installation procedures developed by Evans and Butler (1992a) is shown in figure 2.2. It provides a snapshot of the content of teaching a technical process, whereas the model in figure 2.1 provides a snapshot of how these technical processes might be approached in terms of teaching strategies for students characterised by educational disadvantage.

Evans and Butler (1992a) identified the importance of a number of generic features which have strong claims for inclusion in curriculum designs in the skill domain they studied. 'These features are: self-monitoring and use of task-feedback by the learner and the nature of the teacher-student interaction in regard to the evaluation of student performance and the setting of goals for subsequent performance' (Evans and Butler 1992a). They concluded that the method used to establish the expert model for electrical installation procedures may prove generally useful in the development of competency-based approaches to curriculum, teaching and assessment.

There is little information about initial vocational students' learning preferences and success or failure in relation to the specific learning activities which were examined in this study, namely course hand-outs, videotape, computer simulation, slides, audio and working models, whether the equipment and tools provided were sufficient, the use of libraries and what students like and disliked about assessment. The research available points to the importance of using a variety of teaching approaches for vocational students. Crump et al. (1997, p.30) showed that teachers use a wide range of specific learning activities in adapting to the learning needs of vocational students, including: discussion; video; teaching aids; overheads; hand-outs; use of the (white) board; theory lectures; referring students to reference texts; team work; role plays; workshops; self-exploratory

learning; problem-solving; mind-mapping; guided self-paced learning, and use of discovery learning.

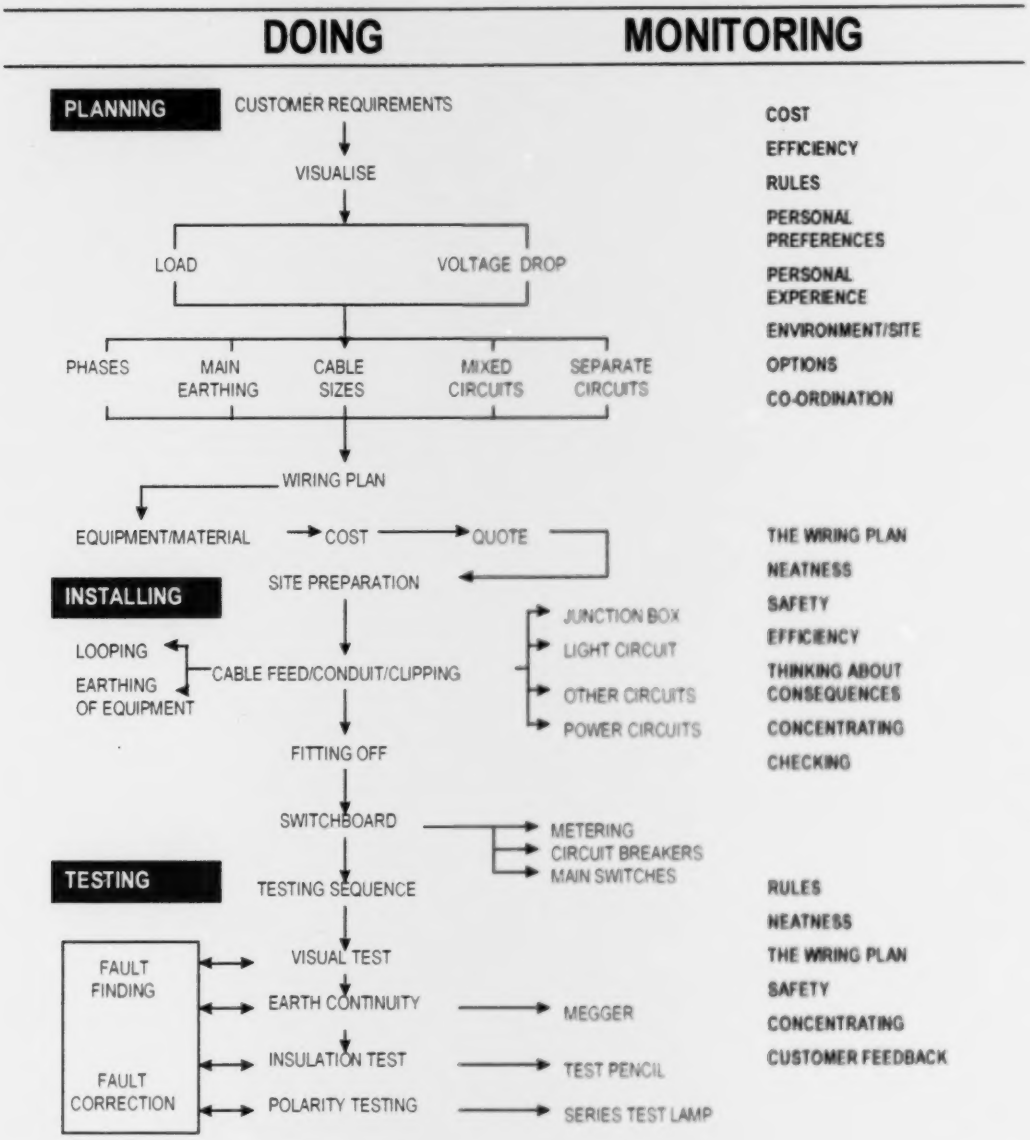

Figure 2.2: Concept map of expert model of electrical installation

Research question 3: What are the significant features of the learning environments in which students experience initial vocational education?

Vocational courses aim to impart elements of vocational skills required by industry or service sectors. According to O'Neill (1993), this means that teaching should constantly refer to the requirements of the vocational area in which their students work ... the learning approach is

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predominantly interpersonal. Demonstration–practice with integrated theory arising through discussion and questioning aims to capture relevant aspects of the culture of the workplace. The aim is also to capture key aspects of the ways in which problems are approached, but as Crump et al. (1997) pointed out this can be confused: teachers may not have the same view of good practice as that held by different enterprises.

In the acquisition of generic skills and attitudes, 'it is important to base classroom instruction around project work that situates learning in a particular context which provides opportunities for authentic practice in a domain' (Stasz et al. 1995, p.xxii). These authors note that: 'When students learn by performing tasks that are situated in authentic practice, their learning is made meaningful by its context. Specific lessons are immediately applied and integrated; success is regarded by progress toward a larger goal. Learning is not abstract or decontextualised.'

Views from the literature about the workplace component of vocational education are covered later (see research question 7).

Research question 4: What are the main teaching strategies currently being used in initial vocational education?

In 1992 Stevenson and McKavanagh carried out a study of TAFE teaching (Stevenson & McKavanagh 1994) prior to the introduction of competency-based training which is now a major influence on teaching strategies (see research question 5 below). The study entailed videotaping TAFE teachers of five trade areas, some of which were included in the present study (carpentry and joinery, automotive). That study showed the dominant characteristics of teachers of theory classes were as follows:

- teacher centredness;
- whole group work;
- teacher monitoring.

Practical classes, in the Stevenson and McKavanagh study were more concerned with:

- demonstrations;
- practising specific skills;
- knowledge about skills;
- teacher monitoring.

Among the pedagogical challenges for initial vocational education is to strike a balance between teacher-directed learning (the teacher as 'master' in a 'master–novice' relationship) and student-constructed learning where the student gains the confidence and initiative to research the knowledge underpinning particular practical tasks; that is, to engage in reflective discovery-based learning processes. As the Mayer Report (1992, p.7) points out: 'Competencies, especially if they are to be transferable, are not automated, "trained" behaviours ... Competence requires both heads-on and hands-on; the capacity to think about performance and also to perform'. Gonczi (1997, p.101) notes that there can be a variety of models of competency-based education. While many teachers would advocate the desirability of self-pacing and student-centred, self-directed learning, it is not absolutely necessary in competency-based education (Gonczi 1997). It is likely, however, that the acquisition of competencies beyond entry-level, requires the capacity to pursue self-directed learning and to reflect on practice.

The changes to teaching resulting from the implementation of CBT were summarised by Harris et al. (1995, p.153) as:

- educators need to develop skills in a variety of teaching methods;
- educators need to accept the role of a resource person and a facilitator;
- educators need to develop skills in planning and scheduling resources, and learning events;
- educators need to develop attitudes and skills in respecting the autonomy of the learners;
- educators need to develop proficiency in motivating learners.

Research question 5: What assumptions do teachers make about how students learn?

It is believed that a major assumption made by vocational teachers is that students learn best by practical means and that tension exists in some cases between what teachers believe is the right way to teach specific practical skills and how enterprises actually approach the performance of these skills. An example of this was cited in the study by Crump et al. (1997) reproduced in the footnote below.[2] The example draws attention to the need to understand the link between:

- the currency of teachers' knowledge of industry practice;
- their beliefs as to what constitutes good teaching practice;
- students' cultural backgrounds, including the relationship between ethnicity, gender and culture (for instance, working-class culture).

Other than some literature on learning by practical means, and a well-developed literature on the topic of teacher power, control and authority, there is little information available in the research literature on this question and it was left for empirical investigation in the present study.

Research question 6: What determines the strategies being used by teachers?

The introduction of CBT is a major factor shaping teaching approaches. According to Harris et al. (1995, p.146) to be effective in CBT programs learners need to develop self-directing learning skills; learn how to locate learning resources and other means of assistance; learn how to use relevant resources such as modules, audio-visual aids, and computers; learn how to relate to educators and trainers as resource persons, facilitators, mentors and assessors; and develop skills in self-assessment. Crump et al. (1997) report that:

> *...assessment and reporting policies in TAFE NSW focus on the level of student achievement in relation to the Module Purpose and Course Outcomes. The implementation of equity principles in TAFE NSW requires teachers to ensure that assessment strategies, schemes and guidelines, as far as practicable, provide all students with an equal opportunity of demonstrating their level of achievement in relation to the Course Outcomes/Module Purpose. This, in turn, requires that assessment processes are designed with an awareness of the full range of students who will be undertaking the course. Assessment of competency-based courses in TAFE NSW is criterion-referenced. It is undertaken against curriculum outcomes and students are not assessed directly against the competency standards. In TAFE NSW there is increased policy emphasis on teacher judgement and on holistic assessment. With holistic assessment, the focus*

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[2] Teachers may feel that if trade students are not taught how to erect a roof without use of prefabricated roof frames they will end up with a narrow set of skills. However, common industry practice in house construction is to use prefabricated roofing built at a factory and erected on the building site, not requiring skills in roof construction. This shows a tension between education and industry practice.

is on the clustering and integration of areas of knowledge, skills and attitudes, rather than on atomisation and separation. Competency-based assessment in TAFE NSW uses both the evidence based 'judgement model of assessment, and the 'measurement' model.

Of course, student need is an important determinant of teaching approaches and the study by Crump et al. (1997) shows that vocational teachers have an extensive repertoire of classroom strategies for adapting to the diversity of student need.

Research question 7: What influence does the workplace have on teaching and learning?

An American study which examined aspects of the integration of vocational education and academic education, linking school and work-based learning, and connecting secondary and post secondary education was reported by Phelps et al. (1995). This study found that students highlighted the importance of an occupational focus to frame the classroom integration efforts (that is, the integration of theory and practice). Students also emphasised the value of connecting curriculum content across courses and saw the importance of the use of various approaches to link work concepts into school-based learning opportunities (Phelps et al. 1995).

A review of American research into the consequences of the school-to-work initiatives, which addressed the question of whether work really contributes to students' education, was carried out by Stern (1997). Previous American studies had shown that students who work appear to reap financial rewards and there was some evidence that they enjoy greater subsequent success in the labour market but may pay an educational price. The research had begun to show that students' school work suffers if they work too many hours a week (Stern 1997). Connecting students' work with classroom learning—the Work-Based Learning initiatives stemming from the *American School-to-Work Opportunities Act 1994*—was seen as likely to mitigate the educational dangers inherent in non-school-linked part-time work. Stern (1997) points out that 'the association between working and school performance does not necessarily show cause and effect. Students who work long hours may simply be more interested in work than in school.

A study which examined the school–work connection found that students who participated in vocational education programs which tied work to school, as opposed to students merely doing part-time work not connected to school, performed better academically (Stern et al. 1997). That study provided further evidence that part-time work which is not connected to school detracts from academic achievement at school (Stern et al. 1997).

By the 1990s it was recognised in America that work-based skill preparation linked to a particular entry-level job, such as traditional apprenticeships, was becoming insufficient, because the job is likely to change (Stern 1997). New skill standards for various industries and occupational clusters began to include 'core competencies' or 'foundation skills' to help people to adapt to changed conditions of work (Stern 1997). Similar initiatives were introduced in Australia stemming from the Mayer Report (1992). On the question of 'what is work experience good for?' Stern's (1997) review of the American literature produced the following possible purposes:

- acquisition of knowledge or skill related to particular occupations or industries;
- career exploration and planning;
- learning all aspects of an industry;
- increasing personal and social competence for work in general;
- academic motivation and achievement.

Stern (1997) acknowledges that there are other gains from workplace learning for high school students, such as increasing capacity for analytical judgement and becoming computer literate, a skill which now relates to most occupations.

On the question of whether work-based learning accomplishes the purposes summarised above, Stern (1997) found supporting evidence was available but 'the studies, however, rely on reports by the participants themselves about what they are learning. Objective measures, and comparisons with non-participants, are lacking'. Moreover, Stern (1997) speaking of an evaluation of American school-to-work partnerships funded through the states noted that links between students' work experiences and the classroom were infrequent and generally tenuous, even though it is possible to convert students' part-time jobs into powerful learning experiences. According to Stern (1997) to ensure that work-based learning becomes an integral part of the curriculum it is necessary to involve teachers of academic subjects such as English, mathematics, science, foreign language and social studies. This will require overcoming teacher resistance (Stern 1997). In conclusion Stern (1997) made the following comments:

- Studies of education which ties work to school, usually as part of vocational education—a form of vocational education called 'co-op' programs in America—show that higher grades are achieved when the part-time work is connected to high school studies.
- Sending non-vocational teachers to spend some time in workplaces outside the school may help them find practical applications of their subject matter.
- Overcoming teacher resistance will require evidence showing how work-based learning can augment classroom instruction as preparation for work and for life. Recent evidence is promising.

An examination of the research literature on work-based learning which was directed to the Australian context was carried out by Hawke (1995). The study highlighted the importance of the following:

- the active involvement of the learner (assisted, for example, by using reflection in the form of continuous awareness and re-assessment by the learner of their own learning);
- the 'authenticity' of learning situations (providing experience of the real pressure of workplace application of skills but allowing the learner latitude to make mistakes off the job);
- attention to the amount and kind of structure in the learning process; for example, supporting the learner by an enabler in the form of mentor, resource or friend, and ensuring that the learner exercises understanding and competence in a 'spiral' of increasing responsibility which moves from the immediate to the big picture view.

There is a growing body of Australian research pointing to the benefits of workplace learning in informal settings in contrast to learning with occurs in formal courses. Brooker and Butler (1997) note that the literature distinguishes between formal learning, dominated by 'knowing that' and informal learning which is more about 'knowing how'. Their study of apprentices learning in the workplace identified the tension between production and learning: since the workplace is essentially a place for production, learning is very much a secondary consideration. According to Brooker and Butler (1997) the demands of production contribute to the following:

- a narrowing of the range of skills and understandings learnt because fast production requires highly developed skills performed repetitively in a known context;
- promoting a curriculum driven by work requirements rather than the learning needs of the apprentice;
- focussing training on quality outcomes rather than on understanding of processes;

- keeping tradespersons in the production mode, rather than teaching apprentices.

Brooker and Butler (1997) argue that workplace learning for apprentices requires:

- promotion of a curriculum characterised by reflective practice with strong feedback loops;
- diversification of the contexts into which the learner is placed to achieve the necessary breadth of skills and understanding;
- the assignment of tasks being made specific to the learners' developmental stage;
- encouragement of the learner's involvement in problem-solving situations where experts model flexibility and inventiveness;
- encouragement of the apprentice to make a personal integration, through dialogue, of the theory and practice offered in the workplace and at TAFE.

Billett (1996) reviewed the program of research relating to knowledge, learning and work, conducted at Griffith University, Queensland, between 1994 and 1996. He drew the following conclusions

- 'The forms of vocational knowledge which permit performance should become the goals for vocational education.' These forms of knowledge include the concepts and procedures which underpin expert performance but should also include 'the broader, less specific forms of knowledge'. Billett (1996) suggests educational goals have to 'encompass situationally specific factors, as well as those goals which are disembedded from practice (for example, canonical knowledge about the vocational practice or educational ideals)'.
- The situated nature of expertise and workplace performance requires curriculum policy to consider how to accommodate the embedding of knowledge in particular workplace sites.
- The existing notion of competency needs extending to secure situational and more comprehensive accounts of knowledge. Billett (1996) identifies the related issue of assessment practices needing to address knowledge which is embedded in particular workplace settings. This raises the question as to what emphasis should be given to validity and reliability in these circumstances.
- On the question of instructional design, Billett (1996) asks: 'How can instruction best be organised to maximise the transfer of knowledge from those circumstances in which it was constructed? Rich pathways on experiences which provide for different kinds of problem-solving in authentic settings need to be structured as part of all vocational courses'.
- Approaches for guided learning have been advocated in both the workplace and educational institutions which propose both close and more distant forms of guidance during engagement in practice as a means of securing the kinds of knowledge required for expert performance.
- Billett (1996) advocates that curriculum decision-making be more broadly distributed to involve both the setting and the teachers or 'expert others' in that setting in legitimate curriculum development roles which permit greater discretion than those currently in place.

According to Johnson (1996) four elements of informal learning are critical for enhancing conceptual learning and developing intellectual skills: contextual learning, peer-based learning, activity-based learning practice, and reflective practice.

McGaw (1996, p.100) referring to development of school-based vocational education in Australia identified the need to conceptualise the role of the workplace in teaching, learning and assessment and to devise ways of working co-operatively with TAFE colleges and industry. In addition, he wrote about the need to develop curricula and teaching methods compatible with the competency-based standards framework.

Smith (1997) notes the 'growing support for the premise that learning, particularly in the secondary school, occurs most effectively and efficiently through the meaningful context of the workplace'. Similarly, Gonczi (1997) draws attention to the capacity of a broad vocational education to provide students with the capability to enter into, analyse and learn from their vocations. This has implications for the integration of experiences gained through relationships in classrooms including group work, team work, and workplace learning into the vocational curriculum.

Important distinctions between traditional classroom and workplace learning contexts were drawn by Sefton et al. (1995). Traditional classroom teachers, they say, generally construct the learning environments, frame the problems, develop the curriculum, learning strategies and resources, but in the workplace, teachers have virtually no control of the processes, procedures, etc. which drive production. The authors note that the range of social, cultural and political variables which make up the workplace learning context are not reflected in CBT's standardised generic curriculum. They note that teachers need to bring aspects of the workplace learning context into training, through relevant learning strategies.

Vocational teaching takes place within a changing world of work. New forms of work organisation show the need for team skills. More complex production processes require higher levels of literacy and numeracy for operators. Rapid, extensive and fundamental social, economic and technological change demands the ability to transfer knowledge and skills to new tasks and situations. It demands that VET develops lifelong learning skills.

Some of the changes in the skills needed by young people in the workplace are described by St Leger and Ward (1997) and Simons and Harris (1997).

> *For young people, finding and maintaining work will require them to be good communicators and innovators to convince employers that they will able to contribute. They will also need good interpersonal skills and work focussed attitudes and values. Those who aspire to a career in business, either as employees or self-employed, will need a knowledge of how business works, and how their skills, knowledge and personal talents fit into this context* (St Leger & Ward 1997).

> *Apprentices in the building trade work in a turbulent and changing environment ... increasingly, apprentices are engaged in training which treats them as collaborators in a small business where trade skills are juxtaposed with business skills—tendering, planning and coming to grips with changing regulations in the industry. To a much greater extent that was once the case, apprentices are required to be autonomous and independent* (Simons & Harris 1997).

Simons and Harris (1997) reported a substantial study of on- and off-job learning in the housing industry, comprising 76 apprentices, 73 host employers, and 103 TAFE teachers. Apprentices rated the teaching of practical skills in a worksite environment very highly. The worksite was seen as important for inculcation of trade values, including 'passing on the trade', helping apprentices to learn for their future role as tradesperson, and as the place where trained tradespersons were located. The TAFE teachers in the study regarded the understanding of the *modus operandi* of the worksite and building of confidence as important for apprentices. The on-site environment provided an authentic real-life setting seen as vital for the type and scope of learning needed if apprentices were to become 'good' tradespersons. The knowledge gained in these environments by apprentices included learning about the context of work—the way the workplace operates—and the context of

the industry including the 'subcontracting work ethic'. Another advantage of the worksite was that it (ideally) allowed apprentices to be exposed to a range and depth of experiences, and to the critical skills of the trade and the problem-oriented nature of the work (Simons & Harris 1997).

Simons and Harris (1997) identified tension between the on-site and off-site learning environments, noting that apprentices were expected to manage the constant transition between the two, taking what they need in order to develop their skills and knowledge. Apprentices in the Simons and Harris (1997) study proposed a number of factors which they believed reduced the effectiveness of their integrated training arrangements. These included:

- poor teaching/training from TAFE teachers and host employers;
- the lack of relevance of TAFE programs to the realities of the workplace;
- the lack of interest shown by both employers and TAFE staff to each other's environment, including a lack of knowledge about what happens in each;
- some apprentices' lack of interest in TAFE;
- the absence of effective communication between the two learning sites;
- a poor working relationship with the host employer;
- the challenge some apprentices face in reconciling the differing expectations held by TAFE teachers and their host employers;
- the need for apprentices to be absent from the workplace, often for extended periods (particularly in the case of apprentices in regional areas) to attend off-job training;
- the continual clash between the pressure for apprentices to be productive in the workplace while at the same time learning their trade.

Apprentices' reasons for believing their learning at TAFE was useful included: provision of theory to underpin workplace learning; gaining of a broader understanding of their trade and the industry; and complementing on-job learning by providing skills which were classified as 'not hands-on skills', for example, public relations and contacts within the industry (Simons & Harris 1997). These findings were similar to those reported by Taylor (1997) who identified the importance of on-site learning in the development of self-knowledge.

TAFE teachers in the Simons and Harris (1997) study were more guarded about the assessment of on-site learning. They noted the value of the work site for its ability to provide motivation, and provide the practice necessary to increase skill levels which could not occur, according to teachers, without the off-site contribution made by TAFE. The off-site provision in TAFE was seen by teachers as providing the 'why' or theoretical component which may be too difficult to teach on site for a range of reasons, including lack of time.[3] The TAFE teachers in the Simons and Harris (1997) study also listed limitations of the worksite including the lack of 'industry perspective' gained by apprentices due to the specialised nature of work provided by individual sub-contractors; the inability of employers to provide quality training and supervision; and the tension between making money and providing training to apprentices.

In relation to work-based education Ryan (1997, p.19) in a review of research into vocational education in schools concluded that:

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[3] Trade teaching in TAFE includes practical exercises which, in their positioning in the curriculum, usually serve a double purpose: to get a student started on acquiring particular hand skills (for example, marking out work to be machined) and to introduce key principles necessary to gain theoretical understanding. For example, marking out exercises in fitting and machining introduce the concepts of datum (reference) lines; measurement error (for example, parallax error in sighting to a reference line) and tolerances (for example measuring to ± 0.05mm).

- education which includes exposure to real work in real workplaces is highly valued by students and can greatly enhance the acquisition of the skills sought in general education;
- the work-based education which works best is that which results from genuine partnerships and networking at local level;
- integration of vocational and general education and of institution-based and workplace initiatives remains poor;
- effective vocational education is extremely resource-intensive and requires fundamental changes to school culture and organisation. The incompatibility between traditional teaching cultures and those supportive of work-related leaning need to be addressed by appropriate professional and organisational development strategies.

Hager (1997) reviewed the research on learning in the workplace and concluded that the research had demonstrated that the best kinds of learning in the workplace involve appropriate links between formal training and informal workplace learning and that good research on workplace learning needs to take proper account of the diversity of variables in the workplace environment culture.

3. Results

3.1 How the results are presented

This section gives the results of the three sets of data which comprise the study:

- interviews with 113 students at 48 locations;
- interviews with 48 teachers of those students;
- observations of teaching and learning episodes at 37 of the 48 sites.

The remainder of the data of the study are brought together to answer the research questions (see below). A summary of the findings is provided at the end of each section.

Section 3.2	Response and student and teacher profiles.
Section 3.3	Students' reasons for doing a VET course and their opinion of their course
Section 3.4	What do students say about how they learn in initial VET
Section 3.5	What interpretations do students place on specific learning activities?
Section 3.6	What are the significant features of the learning environments in which students experience initial vocational education?
Section 3.7	What are the main teaching strategies currently being used in initial vocational education?
Section 3.8	What assumptions do teachers make about how students learn?
Section 3.9	What determines the strategies being used by teachers?
Section 3.10	What influence does the workplace have on teaching and learning?

3.2 Response and student and teacher profiles

Table 3.2.1 shows the number of providers, gives the response rates for the teacher and student interviews and shows the number of observations of teaching and learning episodes.
The table shows that the study covered 25 TAFE and 23 senior secondary school sites (total of 48 TAFE and school sites). Observations of teaching and learning episodes were carried out at 37 of the 48 sites (20 TAFE sites and 17 school sites). A total of 48 teachers and 113 students participated in the study. The number of teachers was similar for each provider in each State and comprised 25 (52%) TAFE teachers and 23 (48%) school teachers. The number of students in the study was similar for each State and each provider.

It should be noted that the higher number of students and teachers from NSW reflects the higher number of NSW sites sampled (31) compared to Victoria (9) and South Australia (8). It should also be noted that the secondary school students in the study were very young students and not representative of mainstream TAFE students, even at entry level.

In the tables that follow, the number from the questionnaire is given with a prefix of 'S' for student questionnaire, 'T' for teacher questionnaire, and 'Site' for the questions in the site observation questionnaire (see appendix A). Percentages have been rounded.

Table 3.2.1: Response: vocational education providers, students and teachers by State

	PROVIDERS		INTERVIEWS				OBSERVATIONS OF TEACHING	
			Teachers		Students			
	No.	%	No.	(%)	No.	(%)	No.	(%)
TAFE								
NSW	16	33	16	33	33	29	14	38
Vic	5	11	5	11	12	11	2	5
SA	4	8	4	8	6	5	4	11
Sub-totals	25	52	25	52	51	45	20	54
School								
NSW	15	31	15	32	40	35	14	38
Vic	4	8	4	8	12	11	1	3
SA	4	8	4	8	10	9	2	5
Sub-totals	23	48	23	48	62	55	17	46
Total	**48**	**100**	**48**	**100**	**113**	**100**	**37**	**100**

Table 3.2.2 shows that the topics/tasks covered in the observations of teaching and learning episodes in 37 of the 48 research sites were spread across the main areas which were the focus of the study, namely:

- building and construction; metals and engineering; electronics; furnishing; automotive and design and technology (43 student interviews; 11 observations of teaching and learning);
- hospitality; tourism (23 student interviews; 7 observations);
- retail; office accounting (34 student interviews; 10 observations);
- child care; rural (14 student interviews; 5 observations).

Most students interviewed were in office skills (22%) and hospitality/tourism (20%), followed by metals and engineering (11%), and building and construction (10%). Included in the observations of teaching and learning episodes were: office skills, hospitality and tourism (19% each), building and construction (11%) and retail, child care (8% each) and rural (5%).

The sampling strategy was to select the research sites from low, medium and low rural socio-economic status locations. Table 3.2.3 shows that most students (65%) were interviewed at provider locations, TAFE and school, which were low or low-rural socio-economic status locations.

Table 3.2.4 shows that slightly more males than females were interviewed (51% and 42% respectively).

Table 3.2.2: Number of students interviewed and number of observations of teaching and learning by course/subject group

Course/subject	STUDENT INTERVIEWS No.	%	OBSERVATIONS OF TEACHING No.	%
Office skills	25	22	7	19
Hospitality & tourism	23	20	7	19
Metals & engineering	12	11	2	5
Building & construction	11	10	4	11
Furnishing	10	9	-	-
Retail	9	8	3	8
Child care	7	6	3	8
Rural	6	5	2	5
Electronics	6	5	3	8
Automotive	3	3	1	3
Design & technology	1	1	1	3
Missing	-	-	4	11
Total	**113**	**100**	**37**	**100**

Table 3.2.3: Socio-economic status (SES) of provider location where students were interviewed

SES	No.	%
Low	46	41
Medium	34	30
Low rural	27	24
Missing	6	5
Total	**113**	**100**

Table 3.2.4: Gender of students (SQ29a)

GENDER	No.	%
Female	47	42
Male	58	51
Missing	8	7
Total	**113**	**100**

Table 3.2.5 below shows that most students interviewed (68%) were aged 16–17.

Table 3.2.5: Age of students (SQ29b)

AGE	No.	%
15	1	1
16	36	32
17	42	36
18	7	6
19	3	3
20 over	3	3
Missing	21	19
Total	**113**	**100**

Table 3.2.6 below shows that nine per cent of students identified as Aboriginal or Torres Strait Islander.

Table 3.2.6: Aboriginal or Torres Strait Islander (ATSI) identity of students (SQ30)

ATSI	No.	%
Yes	10	9
No	98	87
Missing	5	4
Total	**113**	**100**

Table 3.2.7 shows that 34 per cent of students interviewed said they were receiving financial assistance.

Table 3.2.7: Students receiving financial assistance (SQ31)

RECEIVING ASSISTANCE	Number	%
Yes	38	34
No	67	59
Missing	8	7
Total	**113**	**100**

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English was the first language for 84 per cent of students interviewed (table 3.2.8).

Table 3.2.8: Students with English as first language (SQ32)

ENGLISH FIRST LANGUAGE	Number	%
Yes	95	84
No	14	12
Missing	4	4
Total	**113**	**100**

Six per cent of students interviewed considered they had a learning disability (table 3.2.9).

Table 3.2.9: Students with learning disability (SQ34)

LEARNING DISABILITY	Number	%
Yes	7	6
No	101	89
Missing	5	5
Total	**113**	**100**

Table 3.2.10, based on the classroom observations, shows that 46 per cent of courses/subjects did not have students from non-English-speaking-backgrounds but that 32 per cent of classes had NESB students.

Table 3.2.10: Ethnic composition of courses/subjects

ETHNIC COMPOSITION	No. of courses	%
No NESB	17	46
Three or more NESB	7	19
Two are NESB	3	8
One is NESB	2	5
Missing	8	22
Total	**37**	**100**

Table 3.2.11 below shows that 93 per cent of NSW secondary school students interviewed said they were studying for the HSC. Note: Not all students needed to be studying the HSC.

Table 3.2.11: Number of NSW students studying for the HSC (SQ38)

HSC	No.	%
Yes	57	93
No	3	5
Missing	2	2
Total	**62**	**100**

Table 3.2.12 below shows that most students (72%) were studying between ten and 12 units for the HSC and 15 per cent were studying more than 12 units. Only three per cent of NSW students were studying less than ten units.

Table 3.2.12: Number of HSC units undertaken (NSW) (SQ39)

HSC UNITS	No.	%
14	3	5
13	6	10
12	35	56
11	8	13
10	2	3
5–7	3	5
Missing	5	8
Total	**62**	**100**

Table 3.2.13 below shows that the majority of vocational students were studying English – general (38%) or English – contemporary (34%).

Table 3.2.13: English course undertaken by NSW students (SQ40)

ENGLISH COURSE LEVEL	No.	%
Related 3U	-	-
Related 2U	7	10
General	28	38
Contemporary	25	34
Missing	13	18
Total	**73**	**100**

Table 3.2.14 below shows that the majority of students were studying mathematics in society (45%), followed by 2U mathematics (19%).

Table 3.2.14: Mathematics course undertaken by NSW students (SQ41)

MATHEMATICS COURSE LEVEL	No.	%
4U	-	-
3U	5	7
2U	14	19
Maths in society	33	45
Maths in practice	8	11
Missing	13	18
Total	**73**	**100**

Table 3.2.15 below shows that most students (34%) were able to gain their first choice of English and mathematics subjects.

Table 3.2.15: Were English and maths subjects your first choice? (SQ42a)

ENGLISH FIRST CHOICE	Number	%
Yes	39	34
No	4	4
No choice	3	2
Missing	67	60
Total	**113**	**100**

To gain an indication of whether students could freely access vocational subjects they were asked whether timetabling forced a choice between the vocational and general subjects. The majority of students (36%) reported that they were able to choose the vocational subject (table 3.2.16).

Table 3.2.16: Did timetabling force choice between vocational/general subjects? (SQ43)

TIMETABLE FORCED CHOICE	Number	%
Yes	3	3
No	41	36
Missing	69	61
Total	**113**	**100**

Table 3.2.17 below shows that eight per cent of students dropped a subject since they started Year 11 but that 35 per cent of students did not do so.

Table 3.2.17: Dropped a subject since started Year 11? (SQ44a)

DROPPED SUBJECT	Number	%
Yes	9	8
No	39	35
Missing	65	58
Total	**113**	**100**

The provision of information to students about their vocational course is examined in table 3.2.18 below. Most students (76%) had sufficient career information about their vocational course when they enrolled. However, almost 20 per cent said they did not receive sufficient career choice information.

Table 3.2.18: Provision of career choice information at enrolment (SQ20)

CAREER INFORMATION	Number	%
Yes	86	76
No	20	18
Missing	7	6
Total	**113**	**100**

The next three tables give a profile of the teachers interviewed. Table 3.2.19 shows that 40 per cent of teachers had a degree or higher, and 40 per cent had a diploma or TAFE qualification.

Table 3.2.19: Teachers' qualifications (TQ24)

QUALIFICATIONS	No.	%
Masters degree/PhD	6	13
Undergraduate degree	13	27
Dip Ed/Teachers college diploma	10	21
TAFE Diploma/TAFE qualification	9	19
Post graduate qual	1	2
Missing	9	18
Total	**48**	**100**

The majority of teachers (79%) had over five years vocational teaching experience (table 3.2.20).

Table 3.2.20: Total time vocational teaching (TQ24)

TIME TEACHING	No.	%
Between 1 and 2 years	5	11
Between 2 and 5 years	2	4
Over five years	38	79
Missing	3	6
Total	**48**	**100**

Table 3.2.21 below shows that 40 per cent had wanted to be vocational teachers

Table 3.2.21: Why decide to teach vocational courses? (TQ24, multiple response)

REASONS FOR TEACHING	No.	%
Wanted to be a vocational teacher	19	40
Wanted to help kids/saw the need	11	23
The rewards	7	15
Was asked/approached	6	13
Was told to do it	4	8
Missing	6	13

Total teachers = 48

SUMMARY

Section 3.2: Response and student and teacher profiles

Students

One hundred and thirteen initial vocational education students in TAFE (52 students) and secondary schools (61 students) were interviewed from 48 educational delivery sites in three Australian States: NSW (16 TAFE, 15 school sites), Victoria (5 TAFE, 4 school sites) and South Australia (4 TAFE, 4 school sites). The research sites were selected from provider locations characterised as low, or medium or low rural socio-economic status. The majority of provider locations (65%) where students were interviewed were either low, or low-rural, socio-economic status.

There were slightly more males than females in the study. Other details of students were:

- 72% of the students were aged 16–17 years (table 3.2.5)
- 9% identified as Aboriginal or Torres Straight Islander (table 3.2.6)
- 34% received financial assistance (table 3.2.7)
- 12% did not speak English as a first language (table 3.2.8)
- 32% of courses/subjects had one or more students from a non-English-speaking background (table 3.2.10)
- 6% considered had a learning disability (table 3.2.9)
- 93% were studying or had studied for the NSW Higher School Certificate (table 3.2.11)
- 73% were undertaking 10–12 HSC subjects (table 3.2.12)
- 38% were undertaking English – general, and 34% were undertaking English – contemporary (table 3.2.13)
- 45% were undertaking mathematics in society and 19% were undertaking 2U mathematics (table 3.2.14)
- 34% were able to undertake the English and mathematics subjects of their first choice (34%) (table 3.2.15)
- 36% did not experience timetabling restrictions forcing a choice between vocational and general subjects, however 3% of students reported that problem (table 3.2.16)
- 35% had not dropped a subject since starting Year 11 but 8% had done so (table 3.2.17)
- 76% had been provided with career information at enrolment (table 3.2.18)

Teachers

Forty-eight teachers were interviewed from NSW, Victoria and South Australia (TAFE 25, school 23). They were qualified at degree or higher (19%) or had a diploma or TAFE qualification (19%). Most teachers (79%) had taught for over five years (table 3.2.19). Their reasons for teaching vocational courses was that they either wanted to be a teacher (40%), wanted to help students or saw the need for vocational courses (23%), wanted the rewards (15%) or was told to do it (8%) (tables 3.2.19–21).

Observations

There were 37 observations of teaching and learning episodes in the 48 research sites. The topics/tasks covered in the observations of teaching and learning episodes in 37 of the 48 research sites were spread across the main areas which were the focus of the study, namely:

- building and construction; metals and engineering; electronics; furnishing; automotive and design and technology (43 teacher interviews; 11 observations of teaching and learning)
- hospitality; tourism (23 teacher interviews; 7 observations)
- retail; office accounting (34 teacher interviews; 10 observations)
- child care; rural (14 teacher interviews; 5 observations)

Courses/subjects undertaken

Most students interviewed were in office skills (22%) and hospitality/tourism (20%), followed by metals and engineering (11%), and building and construction (10%). Included in the observations of teaching and learning episodes were: office skills, hospitality and tourism (19% each), building and construction (11%) and retail, child care and rural (8% each) (table 3.2.2).

3.3 Students' reasons for doing a VET course and opinion of their course

This section begins with students' opinions of their vocational course and then their reasons for selecting the course. This is followed by students' opinions on the provision of information about the vocational course. The section concludes with students plans and aspirations following completion of the course.

Table 3.3.1a below shows that the majority of students (95%) liked their vocational course. These results are examined in more detail in table 3.3.1b below.

Table 3.3.1a: Students' opinion of their course (SQ5)

LIKED COURSE	No.	%
Yes	108	95
No	1	1
Partly	1	1
Missing	3	3
Total	**113**	**100**

Table 3.3.1b shows that in NSW slightly more school students (55%) than TAFE students (45%) liked their vocational course/subject. In Victoria 50 per cent of school students liked their course compared with 46 per cent of TAFE students. In South Australia 62 per cent of school students liked their vocational course/subject, compared to 38 per cent of TAFE students.

Table 3.3.1b: Students' opinion of their course by State and provider (SQ5)

LIKED COURSE SUBJECT	TAFE No.	TAFE %	School No.	School %	Total No.	Total %
NSW						
Liked course	29	40	40	55	69	95
Not like course	1	1	-	-	1	1
Partly like course	1	1	-	-	1	1
Missing	2	3	-	-	2	3
Sub-total	33	45	40	55	73	100
Victoria						
Liked course	11	46	12	50	23	96
Missing	1	4	-	-	1	4
Sub-total	12	50	12	50	24	100
South Australia						
Liked course	6	38	10	62	16	100
Sub-total	6	38	10	62	16	100
Total students	**51**	**100**	**62**	**100**	**113**	**100**

Students were asked to rate their course/subject using rating choices (very satisfactory, satisfactory, borderline, unsatisfactory or very unsatisfactory). Table 3.3.2 shows that students in NSW rated their course either very satisfactory (48%) or satisfactory (23%) (a combined rating of 71% for the course or subject being very satisfactory or satisfactory, with 54% missing data). Victorian students rated their vocational course as very satisfactory (42%) and satisfactory (58%) giving a combined rating of 100 per cent for the course or subject being satisfactory or very satisfactory. South Australian students rated their vocational course as very satisfactory (63%) and satisfactory (31%) giving a combined rating of 94 per cent for the course or subject being satisfactory or very satisfactory.

Table 3.3.2: Students' rating of vocational course/subject by State[4]

	RATING OF COURSE/SUBJECT							
	Very Satisfactory		Satisfactory		Missing		Total	
STATE	No.	%	No.	%	No.	%	No.	%
NSW	35	48	17	23	21	29	73	100
Victoria	9	42	14	58	1	4	24	100
South Australia	10	63	5	31	1	6	16	100

Table 3.3.3 below shows that more school students (37%) than TAFE students (10%) rated their course as 'very satisfactory'. The rating of the course as 'satisfactory' was similar for both school students and TAFE students.

Table 3.3.3: Opinion of course (all States) by provider (school or TAFE)

	PROVIDER					
	TAFE		SCHOOL		Total	
OPINION	No.	%	No.	%	No.	%
Very satisfactory	11	10	42	37	53	47
Satisfactory	21	18	16	14	37	33
Missing data	19	17	4	3	23	20
Total	**51**	**45**	**62**	**55**	**113**	**100**

[4] Combines SQ47, SQ52a, and SQ56.

Table 3.3.4 shows that females and males were similar in rating their vocational course as very satisfactory or satisfactory.

Table 3.3.4: Opinion of course (all States) by gender (SQ29a)

	GENDER					
	Female		Male		Total	
OPINION	No.	%	No.	%	No.	%
Very satisfactory	24	21	28	25	52	46
Satisfactory	13	12	18	16	31	27
Missing data	14	12	16	14	30	27
Total	**51**	**45**	**62**	**55**	**113**	**100**

Students were asked if they would choose the vocational course again if they had the opportunity. Table 3.3.5 shows that a total of 68 per cent all students interviewed would choose the same vocational course or subject again (State totals: NSW 67%, Victoria 79%, and SA 56%).

Table 3.3.5: Would students choose vocational subject again? (Q45a)

WOULD CHOOSE SUBJECT AGAIN	Number	%	% for State
NSW			
Yes	49	43	67
No	5	4	7
Missing	19	16	26
Sub-total	73	64	100
Victoria			
Yes	19	15	79
No	3	3	13
Missing	2	1	8
Sub-total	24	19	100
South Australia			
Yes	9	8	56
Missing	7	8	44
Sub-total	16	16	100
Total Yes	77	68	
Total No	8	7	
Total missing	28	25	
Total	**113**	**100**	

Table 3.3.6 below gives students' reasons for liking the vocational course/subject. Students gave multiple responses to this question. Reasons given were: the gaining of work skills (32%), the practical side of the course or subject (24%) and the good classroom atmosphere (20%). The possibility of the course leading to job opportunity (15%) and the variety of the course/subject (12%) were also reasons for liking the course. The theory side (2%) did not score high as a reason for liking the course. There were a high number of missing responses in answer to this question and to other questions reported below. The number of missing respondents is shown in the tables to aid evaluation of the students responses.

Table 3.3.6: What students liked about their course (SQ2a, multiple response)[5]

LIKED COURSE	No.	%	Missing
Gain work skills	36	32	77
Practical side	27	24	86
Good classroom atmosphere	23	20	90
Leads to job opportunity	15	13	98
Variety	12	11	101
Work is easy	8	7	105
Treated like adult	5	4	108
Theory side	2	2	111

Total students = 113

Table 3.3.7 shows the reasons why students do a VET course. Note that a question was included in the student questionnaire to find out whether students chose, or were placed in, the vocational course. If students were placed in the course it could mean that unreliable data may result from a question about their reasons for doing a vocational course. The majority of students (90%) said they chose the vocational course with only six per cent saying they were placed in the course (see appendix B, table B.1).

The main reasons students gave for doing a vocational course are: the subject is interesting or enjoyable 40 per cent (TAFE 15%, school 25%); to get a specific job or that they already had a specific job 34 per cent (TAFE 15%, school 19%); and to get qualifications or skills or experience 28 per cent (TAFE 13%, school 12%). Doing a vocational course as an investment for the future was important for ten per cent of students and particularly for female students (see table 3.3.9 below).

[5] In multiple response questions the responses do not add up to 100% as students can give more than one answer.

Table 3.3.7: Students' reasons for doing vocational course, by provider (SQ1a by provider, multiple response)

REASON FOR DOING COURSE/SUBJECT	PROVIDER TAFE n	(%)	School n	(%)	Missing n	(%)	Total n	(%)
Subject interesting, enjoyable	17	(15)	28	(25)	68	(60)	113	(100)
Get/have specific job	17	(15)	21	(19)	75	(66)	113	(100)
Get qualifications/skills/experience	15	(13)	13	(12)	85	(75)	113	(100)
Fall back for the future	3	(3)	7	(6)	103	(91)	113	(100)
Advantage for work/study	5	(4)	2	(2)	106	(94)	113	(100)
Prefer physically active work	1	(1)	2	(2)	110	(97)	113	(100)

Total students = 113

Table 3.3.8 compares students' reasons for doing their vocational course and the socio-economic status of the provider location. There were no differences due to socio-economic status.

Table 3.3.8: Students' reasons for doing vocational course, by SES of provider location (SQ1a by SES, multiple response)

REASON FOR DOING COURSE/SUBJECT	SES Low n	(%)	Low-rural n	(%)	Medium n	(%)	Missing n	(%)	Total n
Subject interesting, enjoyable	17	(15)	12	(11)	14	(12)	70	(62)	113
Fall back for the future	3	(3)	3	(3)	3	(3)	104	(92)	113
Prefer physically active work	2	(2)	-	-	-	-	111	(98)	113
Get/have specific job	15	(13)	10	(9)	13	(12)	75	(66)	113
Get qualifications/skills/exp	8	(7)	9	(8)	8	(7)	88	(76)	113
Advantage for work/study	3	(3)	-	-	4	(4)	106	(93)	113

Total students = 113

Gender differences in students' reasons for doing a vocational course are shown, for the data in the above table, in table 3.3.9. The table shows differences between males and females, as follows:

- males were more inclined than females to choose a subject because it was interesting or enjoyable;
- females were more inclined than males to choose a subject because it represented an opportunity for the future or to get/have a specific job.

Both males and females gave equal weight to getting qualifications/skills or experience as a reason for doing the vocational course.

Table 3.3.9: Reasons for doing vocational course, by gender (SQ1a by SQ29a)

REASON FOR DOING COURSE/SUBJECT	GENDER Female n	(%)	Male n	(%)	Missing n	(%)	TOTAL n	(%)
Subject interesting, enjoyable	13	(12%)	30	(27%)	2	(2%)	45	(40%)
Fall back for the future	9	(8%)	1	(1%)	0	(0%)	10	(9%)
Prefer physically active work	0	(0%)	3	(3%)	0	(0%)	3	(3%)
Get/have specific job	19	(17%)	3	(3%)	38	(34%)	60	(53%)
Get qualifications, skills, experience	13	(12%)	12	(11)	3	(3%)	28	(25%)
Advantage for work/study	3	(3%)	4	(4%)	0	(0%)	7	(6%)
Total	**44**	(39%)	**23**	(20%)	**41**	(36)	**108**	(96%)

Table 3.3.10 below shows that most students (92%) believed the vocational course would help in further study or job and gave as reasons (table 3.3.11) that the qualification is important (22%) and the experience gained is important (14%).

Table 3.3.10: Will course help in further study or job? (SQ21a)

COURSE HELP	Number	%
Yes	104	92
No	2	2
Maybe	1	1
Missing	6	5
Total	**113**	**100**

Table 3.3.11: Students' reasons why course will help in further study or job (SQ21b, multiple response)

WHY COURSE HELP	No.	%	Missing
Qualification is important	25	22	97
Experience gained is important	16	14	92

Total students = 113

Table 3.3.12 below shows that most students (72%) knew what they wanted to do after finishing the course and that a further 13 per cent had some idea what they wanted to do.

Table 3.3.12: Know what to do after finishing course? (SQ22a)

KNOW WHAT TO DO WHEN FINISH	Number	%
Yes	81	72
No	10	9
Maybe	15	13
Missing	7	6
Total	**113**	**100**

Table 3.3.13 below shows that students' plans following the course were to get another qualification or go to university (41%), work, other than an apprenticeship (35%), or get or finish an apprenticeship (13%).

Table 3.3.13: What are you planning to do? (SQ22b, multiple response)

PLANNING TO DO	No.	%	Missing
Get other qualification or go to uni	46	41	66
Work	40	35	73
Get/finish apprenticeship	15	13	98

Total students = 113

A summary of the results in section 3.2 is given on the next page.

SUMMARY

Section 3.3: Students' reasons for doing a VET course and opinion of their course

The majority of students (95%) liked their vocational course (table 3.3.1a). In NSW slightly more school students (55%) than TAFE students (45%) liked their vocational course/subject. In Victoria 50 per cent of school students liked their course compared to 46 per cent of TAFE students. In South Australia 62 per cent of school students liked their vocational course/subject, compared to 38 per cent of TAFE students (table 3.3.1b).

Students were asked to rate their course/subject using rating choices (very satisfactory, satisfactory, borderline, unsatisfactory and very unsatisfactory). Among NSW students 48 per cent rated their course either 'very satisfactory' or 'satisfactory' (54% missing data). Among Victorian students 100 per cent rated their vocational course as 'very satisfactory' or 'satisfactory'. Among South Australian students 94 per cent rated their vocational course as 'very satisfactory' or 'satisfactory'.

Examination of differences between TAFE and secondary school students' rating of their course revealed that more school students than TAFE students rated their course/subject as 'very satisfactory'. However, school students and TAFE students were similar in their rating of the course as 'satisfactory' (table 3.3.3). Examination of differences between females and males in their rating of the course/subject revealed only small differences due to gender (table 3.3.4): 33 per cent of females and 41 per cent of males rated their vocational course as 'very satisfactory' or 'satisfactory'.

When asked if they would choose the vocational course again if they had the opportunity, a total of 68 per cent of all students interviewed would choose the same vocational course or subject again. The State totals were: NSW 67 per cent, Victoria 79 per cent, and SA 56 per cent (table 3.3.5).

Students' reasons for liking the vocational course included: the gaining of work skills (32%), the practical side of the course or subject (24%) and the good classroom atmosphere (20%). The course leads to job opportunities (13%) and the variety of the course/subject (11%) were also reasons for liking the course. The theory side (2%) did not score high as a reason for liking the course (table 3.3.6).

The reasons why students do a vocational course are: the subject is interesting or enjoyable 40 per cent (TAFE 15%, school 25%); to get a specific job or that they already had a specific job 34 per cent (TAFE 15%, school 19%); and to get qualifications or skills or experience 25 per cent (TAFE 13%, school 12%) (table 3.3.7). Females rather than males preferred to do the vocational course as a fall back for the future and to get/have a specific job (table 3.3.9). From a comparison of students' reasons for doing their vocational course and the socio-economic status of the provider location there was no difference indicated (table 3.3.8).

Most students (92%) believed the vocational course would help in further study or job (table 3.3.10) and gave as reasons (table 3.3.11) that the qualification is important (22%) and the experience gained is important (14%).

Most students (72%) knew what they wanted to do after finishing the course and a further 13 per cent had some idea what they wanted to do (table 3.3.12). Students' plans following the course were to get another qualification or go to university (41%), or get work, other than an apprenticeship (35%), or get or finish an apprenticeship (13%) (table 3.3.13).

3.4 What students say about how they learn in initial VET

This research question was approached by asking students questions about their preferred way of learning, their best and worst experience in the course or subject; the subjects they liked and disliked and the reasons for that; and by examining what parts of the courses/subjects were easy to learn and were hard to learn. Students' preferred way of learning is shown in table 3.4.1. Most students (67%) preferred to work with both head and hands but 28 per cent of students preferred to work mainly with their hands. More students who preferred to work with their hands were in schools (total of 22) than TAFE (total of ten) (further examination of table 3.4.1 not shown). There were no differences between females and males in their preferred way of learning.

Table 3.4.1: Students' preferred way of learning (SQ19)

LEARNING PREFERENCE	No.	%
Mostly like work with hands	32	28
Mostly like work with head	4	4
Mostly like work with both head and hands	76	67
Missing	1	1
Total	**113**	**100**

Students' best experiences were getting job-related skills (36%); getting good results (9%) and personal satisfaction and reward (6%) (see table 3.4.2a).

Table 3.4.2a: Students' best experience in course/subject (SQ2b1, multiple response)

BEST EXPERIENCE	No.	%	Missing
Get job-related skills	41	36	71
Getting good results	10	9	103
Personal satisfaction/reward	7	6	106

Total students = 113

Students' worst experience in the course (table 3.4.2b) was the assessment (13%) followed by boring classes (8%), not doing well enough; too much work; the theory; missing a test; the teacher or the teaching; or the timetable (4% each); or the work experience (2%). Only one student reported the 'travel time' as the worst experience.

Table 3.4.2b: Students' worst experience in the course (SQ2c, multiple response)

WORST EXPERIENCE	No.	%	Missing
Assessment	15	13	98
Boring classes	9	8	104
Not doing well enough	8	7	105
Too much work	8	7	105
The theory	8	7	105
Missing a test	5	4	108
Teacher/teaching	5	4	108
The timetable	5	4	108
Work experience	2	2	111
Travel time	1	1	112
Other reason	15	13	98

Total students = 113

Table 3.4.3 shows that 27 per cent of students did not find the course hard to learn. Parts of the course which students said were hard to learn included individual subjects (21%) and a lot to remember (10%). Only five per cent of students said the theory was hard to learn. In responding to this question three per cent of students commented adversely on having Year 11 and Year 12 students in the same class.

Table 3.4.3: Parts of the course which are hard to learn (SQ4a, multiple response)

HARD TO LEARN	No.	%	Missing
Course was not hard to learn	30	27	83
A subject (named once, not English)	24	21	89
Lot to remember	11	10	102
The theory	6	5	108
The maths	5	4	108
The formulae	5	4	108
The practical	4	3	109
Language/terminology	4	3	109
Using hands*	4	3	109
Yr 11/12 in same class	3	3	110
Getting started early in year	3	3	110
Not much	2	2	111

Total students = 113.
*refers to use of hands in relation to tools/typewriter/drawing.

Table 3.4.4 shows that the practical skills component of the course was easy to learn (40%). The course was easy or OK for 30 per cent of students. Mathematics or theory was not rated as easy to learn (2% and 1% respectively).

Table 3.4.4: Parts of course which students found easy to learn (SQ4b, multiple response)

EASY TO LEARN	No.	%	Missing
Practical skills	45	40	70
Some or all course easy	34	30	79
Some or all course difficult	3	3	110
What know already	3	3	110
Maths	2	2	113
Theory	1	1	112

Total students = 113

The next four tables show the types of courses which students like and dislike and their reasons. Table 3.4.5 shows that the types of courses which students like doing the most are in: humanities/art (26%), technical skills courses, technology (19%); tourism and hospitality (13%); and maths and science and computers (both 12%). However, table 3.4.7 shows that 39 per cent of students dislike humanities and social science, and 31 per cent of students dislike mathematics and science. Reasons why students dislike courses or subjects include: boring/irrelevant (21%; too hard (19%); not suited to course (17%); problems with course content (14%) and problems with course delivery (9%).

Table 3.4.5: Types of courses students like doing the most (SQ17a, multiple response)

LIKE DOING	No.	%	Missing
Humanities/art	29	26	84
Technical skills courses, technology	21	19	92
Tourism/hospitality	15	13	98
Maths/science	14	12	99
Computers	13	12	100
Art/design	10	8	103
Building	7	6	106
Physical education	7	6	106
Manual/physical activities	7	6	106
Rural/horticulture	6	5	107
Business	6	5	107
TAFE courses (unspecified)	3	3	110
Child care	2	2	111
Retailing	2	2	111

Total students = 113

Table 3.4.6 gives the reasons why students mentioned the types of courses they like in table 3.4.5. Students like to do practical things (27%); they like variety (10%); they like to be helped with learning (8%); and they like courses which are interesting or good or the teacher is good (8%).

Table 3.4.6: Reasons why courses are liked (SQ17b, multiple response)

REASONS FOR LIKING	No.	%	Missing
Do practical things	31	27	82
The variety	11	10	102
Helps me with learning	9	8	104
Is interesting/teacher interesting or good	9	8	104
Was good at course, subject	8	7	105
Not stressful	7	6	106
Not have to write	6	5	107
Looking for work in the industry	5	5	108
Gain some autonomy	4	4	109
Like challenge	2	2	111
Like to write	2	2	111
Get to do what you like	3	3	110
Course/subject enjoyable	1	1	112
Like group work	1	1	112
The theory relates to job skills	1	1	112
Other	8	7	105

Total students = 113

The main courses or subjects which students dislike are humanities/social science, mathematics and business studies (table 3.4.7).

Table 3.4.7: Courses or subjects students dislike (SQ18a, multiple response)

DISLIKE	No.	%	Missing
Humanities/social science	44	39	69
Mathematics/science	35	31	78
Business studies	13	12	100
Science	8	7	105
Computing	5	4	108
Practical	2	2	111
Theoretical	2	2	111
Tourism/hospitality	1	1	112
Other	14	12	99

Total students = 113

Students' reasons for disliking subjects include: boring or irrelevant (21%); too hard (19%); was not suited to course and problems with course content or delivery (table 3.4.8).

Table 3.4.8: Reasons for disliking subjects (SQ18b, multiple response)

DISLIKE REASONS	No.	%	Missing
Boring or irrelevant	24	21	89
Too hard	21	19	92
Was not suited to course	19	17	94
Problems with course content	16	14	97
Problems with course delivery	10	9	103
Not like teacher	6	5	107
Not understand it	3	3	110
Not hard enough	2	2	111
Done work before	1	1	112
Other	1	1	112

Total students = 113

Table 3.4.9 shows the services which students wanted to help them to learn. Most needed was help with language skills (21%); help with study skills (7%); and child care facilities; help with motivation; and internet access (all 4% of respondents).

Table 3.4.9: What services should be provided to help you to learn? (SQ16, multiple response)

SERVICES NEEDED	No.	%	Missing
Help with language skills	24	21	89
Help with study skills	8	7	105
Child care facilities	4	4	109
Help with motivation	4	4	109
Use of internet	4	4	109
Accommodation/meeting place	3	3	110
Tutoring	3	3	110
No help required	34	30	79

Mentioned twice: Another language; interview skills; a bit more help on the assessment; guest demonstrators/speakers; tutorials.

Mentioned once: transport service to work experience; Aboriginal support services; support for disabled students; practice time in workshop outside class; help for international students; better library facilities, most recent books; use of computers outside class hours; study skill assistance; opportunity to meet with other students.

Total students = 113

SUMMARY

Section 3.4: What students say about how they learn in initial VET

To probe students' preferred ways of learning they were asked if they preferred to work with their head, their hands or both head and hands. Most students (67%) preferred to work with both head and hands but 28 per cent of students preferred to work mainly with their hands (table 3.4.1). Twice as many school students as TAFE students preferred to work mainly with their hands.

Students' best experiences in the course/subject were getting job-related skills (36%); getting good results (9%) and personal satisfaction and reward (6%) (table 3.4.2a). Their worst experience in the course was the assessment (13%) followed by boring classes (8%), not doing well enough; too much work; the theory; missing a test; the work experience; the teacher or the teaching; the timetable; or the travel time (7% each) (table 3.4.2b).

For 27 per cent of students the course was not hard to learn. Parts of the course which students said were hard to learn included individual subjects (21%) and a lot to remember (10%). Only six per cent said the theory was hard to learn. In responding to this question, three per cent commented adversely on having Year 11 and Year 12 in the same class (table 3.4.3).

The practical skills component of the course/subject was easy to learn for 45 per cent of students and for 34 per cent of students some or all of the course was easy. Mathematics or theory were not rated easy to learn (2% and 1% respectively) (table 3.4.4).

The types of courses/subjects which students liked doing the most are: humanities/art (26%), technical skills courses and technology (19%), tourism and hospitality (13%), mathematics/science (12% and computers (12%) (table 3.4.5). The reasons why courses/subjects are liked are: to do practical things (27%); the variety (10%); helps me with learning (8%); the subject is interesting or the teacher is interesting or good (8%). Other reasons were that the student was good at the course; the course was not stressful; not having to write; and looking for work in the industry (table 3.4.6).

The courses/subjects which students disliked are: humanities/social science (39%), mathematics/science (31%), and business studies (12%) (table 3.4.7). Other disliked courses/subjects are science, computing, practical and theoretical. The reasons why subjects are disliked are: boring or irrelevant (21%); too hard (19%); was not suited to the course (17%); and problems with the course delivery (9%) (table 3.4.8).

Services which students said should be provided to help them to learn are: help with language skills (21%); help with study skills (7%); and child care facilities; help with motivation; and use of the internet (4% each) (table 3.4.9).

3.5 What interpretations do students place on specific learning activities?

This section covers the use of teaching aids (course hand-outs, videotape, computer simulation, slides, audio and working models), whether the equipment and tools provided were sufficient, the use of libraries and what was liked and disliked about the assessment.

Tables 3.5.1 to 3.5.3 report students' perceptions of teaching aids including course hand-outs, videotape, computer simulation, slides, audio and working models. The tables show that hand-outs applied to course description/content (65%), theory (9%), assessment (7%), and course information (3%).

Table 3.5.1: What did the hand-outs cover? (SQ6b, multiple response)

HAND-OUTS	No.	%	Missing
Course description/content	74	65	39
Theory	10	9	103
About assessment	8	7	105
Course info	3	3	110

Total students = 113

Table 3.5.2 shows that most students (82%) regarded the hand-outs as helping them to learn.

Table 3.5.2: Did hand-outs help you to learn? (SQ7a)

HELP LEARN	Number	%
Yes	93	82
No	2	2
Missing	18	16
Total	**113**	**100**

Table 3.5.3 shows that teachers used videotape (69%), computer simulation (18%), slides (4%), audiotape (4%), and working models (13%).

Table 3.5.3: Students' reports of use of videotape, computer simulation, slides, audiotape and working models (SQ8)

	videotape		computer simulation		slides		audiotape		working models	
	Number	%	Number	%	Number	%	Number	%	Number	%
Yes	78	69	16	14	4	4	4	4	15	13
No	11	10	16	14	15	13	15	14	17	15
Missing	24	21	81	72	94	83	94	83	81	72
Total	**113**	**100**	**113**	**100**	**113**	**100**	**113**	**100**	**113**	**100**

Table 3.5.4 shows that 18% of students said equipment and tools were not sufficient.

Table 3.5.4: Students' views on whether equipment/tools are sufficient (SQ14a)

EQUIPMENT TOOLS SUFFICIENT	No.	%
Yes	79	70
No	21	18
Partly	4	4
Missing	9	8
Total	**113**	**100**

Table 3.5.5 shows that 15 per cent of students wanted more or better equipment, and seven per cent wanted more or better materials.

Table 3.5.5: Students' views on equipment/tools needed (SQ14b, multiple response)

NEEDED	No.	%	Missing
More, better equipment	17	15	96
More, better materials	8	7	105
More books	1	1	112
More videos	1	1	112
More simulation	1	1	112
Other	4	4	109

Total students = 113

Table 3.5.6 shows that 38 per cent of students did not use a library.

Table 3.5.6: Students' use of a library (SQ15a)

LIBRARY	Number	%
Yes	58	51
No	43	38
Missing	12	11
Total	**113**	**100**

Table 3.5.7 shows that for the 51 per cent of students who use a library (table 3.5.7 above) most used a TAFE library (29%), a school library (25%) and/or a public library (19%).

Table 3.5.7: What type of library was used? (SQ15b, multiple response)

TYPE OF LIBRARY	Number using library	%	Missing
Used TAFE library	33	29	76
Used public library	22	19	86
Used school library	28	25	81
Used university library	2	2	106

Total students = 113

The next two tables give students views about assessment. Table 3.5.8 below should be read in conjunction with table 3.4.2b which showed that assessment was the worst experience in the course for 13 per cent of students. Table 3.5.8 shows that 50 per cent of students had nothing to dislike about assessment. For nine per cent of students there was too much work and too little time, and eight per cent of students disliked the written work.

Table 3.5.8: What students dislike about assessment (SQ3a, multiple response)

ASSESSMENT DISLIKE	No.	%	Missing
Nothing	56	50	57
Too much work/no time	10	9	103
Written work	9	8	104
No second chance	4	4	109
Lack of clarity/relevance	1	1	112
Buying the books	1	1	112
Theory assessment	1	1	112
Some workplaces not easy	1	1	112
Other reason	9	8	104

Total students = 113

Table 3.5.9 below shows that 38 per cent of students regarded the assessment as good.

Table 3.5.9: What students like about assessment (SQ3b, multiple response)

ASSESSMENT LIKE	No.	%	Missing
Assessment is good	43	38	70
Good teaching/good course	21	18	92
Course not hard/good pace	13	12	100
Practical work	8	7	105

Total students = 113

SUMMARY

Section 3.5: What interpretations do students place on specific learning activities?

This research question examined provision of information to students via course hand-outs; use of teaching aids; adequacy of equipment; and students' use of libraries and views of assessment.

Course hand-outs provided to students covered: description of course content (65% of replies), theory (9%), assessment (7%), and course information (3%) (table 3.5.1). Most students (82%) said hand-outs helped them to learn (table 3.5.2). Other teaching aids used were: videotape (69%), computer simulation (14%), slides (4%), audiotape (4%), and working models (13%) (table 3.5.3).

Most students (70%) regarded that equipment or tools were sufficient but 21 per cent said equipment/tools were not sufficient (table 3.5.4). Fifteen per cent of students wanted more or better equipment, and seven per cent wanted more or better materials (table 3.5.5).

A sizeable number of students (38%) did not use a library (table 3.5.6). For the 51 per cent of students who use a library most used a TAFE library (29%), a school library (25%) and/or a public library (19%) (table 3.5.7).

Half of the students had nothing to dislike about assessment (table 3.5.8) but for nine per cent of students there was too much work and too little time, and for eight per cent of students the written work was what they disliked about assessment (table 3.5.9). In response the question about what students liked about assessment: 38 per cent of students said the assessment was good, there was good teaching and the course was good (18%) and the course was not hard/good pace (12%) and the practical work was liked by seven per cent of students.

3.6 What are the significant features of the learning environments in which students experience initial vocational education?

Some important features of the learning environments in initial VET can be summarised from the previous tables. The learning environments are concerned with vocationally oriented subjects/courses (table 3.2.2). The majority of provider locations (65%) are low, or low rural, socio-economic status (table 3.2.3). The majority of the students interviewed (32%) were from English-speaking-backgrounds but one-quarter of the courses/subjects had one or more students from a non-English-speaking-background (table 3.2.10). Most students had English as their first language (84%) (table 3.2.8). Nine per cent of the students interviewed identified as Aboriginal or Torres Strait Islander (table 3.2.6) and six per cent of students considered themselves to have a learning disability (table 3.2.9).

The overwhelming majority of students like their vocational course (95%, table 3.3.1a) and the reasons given for this were that the courses would help them gain work skills (32%), including practical skills (24%); the classes had a good atmosphere (20%); the courses led to job opportunities (13%); and the course had variety (11%) (table 3.3.6). The reasons for choosing a vocational course are that the subject is interesting or enjoyable (40%); they wanted to get a specific job or they already had a specific job (34%); and to get qualifications or skills or experience (25%) (see table 3.3.7). Doing a vocational course as a fall back for the future was important for ten per cent of students and particularly for female students (see table 3.3.8).

Table 3.6.1 below gives the main patterns of forms of teaching based on the observation of 37 classes. The usual pattern was that some lecture or discussion was mixed with other forms of teaching, such as practical work. The table shows that the observed teaching and learning episodes were mainly practical (46%), lecture (43%), demonstration (22%), and group work or individual self-paced learning (19% each).

Table 3.6.1: Observed form of teaching (SiteQ3a, multiple response)

FORM OF TEACHING	No.	%
Practical	17	46
Lecture	16	43
Demonstration	8	22
Mostly group work	7	19
Individual, self-paced	7	19
Teacher-led class discussion	3	8
Video	3	8
Group activity	3	8
Explanation by teacher	2	5
Role play	1	3
Peer tutoring	1	3

Total site observations = 37

Table 3.6.2: Student behaviour observed (SiteQ6, multiple response)

STUDENT BEHAVIOUR	No	%
Most students interested in topic	23	62
Participated in learning process	18	49
Focussed on learning activity	17	46
Attentive to teacher	11	30
Talking to each other about work	9	24
Asked questions	6	16
Quiet	6	16
Asked for teacher assistance	5	14

Mentioned four times: small group students not participating; some students inattentive; talking to teacher about work; enthusiastic; answered questions.

Mentioned twice: helping each other; showed enjoyment; initiated class discussion; responded positively to teacher question; contributed to class discussion; motivated; some late for class; mixed ages in class.

Mentioned once: distracted; noisy; most not interested, listen only when interested; talking about subjects other than work; some diligent; respectful of teacher; only small group concentrate on task; teacher warn not concentrating students; concentration varies.

Total site observations = 37

Observed student behaviour in the classroom is summarised in table 3.6.2. The results show that most students were interested in the topic (62%), participated in the learning process (49%), were focussed on the learning activity (46%); were attentive to the teacher (30%), talked each other about the work (24%) and asked questions or were quiet (16%).

Table 3.6.3 reports observers' categorisation of gender interactions in the classroom. The majority of teachers, 30 per cent, were seen to give equal help to males and to females (data were missing for 27 % of teachers). On only two occasions did males demand more attention than females.

Table 3.6.3: Gender interactions in classroom

GENDER INTERACTIONS	No.	%
Teacher gave equal help to males/females	11	30
Boys demanded more attention	2	5
Not applicable (all male or all female class)	14	38
Missing	10	27
Total	**37**	**100**

SUMMARY

Section 3.6: What are the significant features of the learning environments in which students experience initial vocational education?

The main patterns of forms of teaching, based on the observation of 37 classes, was that that lecture or discussion was mixed with other forms of teaching, such as practical work. The observed teaching and learning episodes were mainly practical (46%), lecture (43%), demonstration (22%), and group work or individual self-paced learning (19% each) (table 3.6.1).

It was observed that most students were interested in the topic (62%), participated in the learning process (49%), were focussed on the learning activity (46%); were attentive to the teacher (30%), talked each other about the work (24%) and asked questions or were quiet (16%) (table 3.6.2).

The observation of gender interactions in the classroom showed that the majority of teachers, 30 per cent, gave equal help to males and to females (data were missing for 27% of teachers). On only two occasions did males demand more attention than females (table 3.6.2). The presence of an observer in the classroom may have influenced the observed behaviour.

The perceived qualities of the teachers and the teaching strategies they use are a very important part of the learning environments for initial vocational education students and are covered in the next section.

3.7 What are the main teaching strategies currently being used in initial vocational education?

Teachers' actions in the classroom, categorised by the observers of the teaching and learning episodes, are summarised in table 3.7.1. The main actions of teachers were to help students as

required (32% of teachers); answer questions (24%); explain (16%); organise the students into groups; be organised; and question students to check understanding (14%). Eleven per cent of teachers: helped students when asked; involved students in teaching; related industry experiences; were knowledgeable about subject; were willing to help; used overhead transparencies; and helped individual students. Other teaching actions (8% of responses) were: being supportive of student effort; praised students; pulled students into line; needed to quieten noisy student; used humour; and drew out student responses to summarise information.

Table 3.7.1: Observers' categorisation of teaching actions in the classroom (SiteQ5, multiple response)

TEACHING ACTIONS IN CLASSROOM	No.	%
Helped students as necessary	12	32
Answered questions	9	24
Explained	6	16
Organised students into groups	5	14
Teacher was well organised	5	14
Questioned students to check understanding	5	14
Helped students when asked	4	11
Involved students in teaching	4	11
Teacher related industry experience	4	11
Knowledgeable about subject	4	11
Showed was willing to help	4	11
Used overhead transparencies	4	11
Helped individual students	4	11

Mentioned three times (8% of responses): Supportive of student effort; praised students; teacher pull student into line; needed to quieten a noisy student; used humour; drew out responses to summarise information.

Mentioned twice: teacher talk informally with students; teacher monitored safe use of equipment; demonstrated skills; student could work alone or in groups or pairs; listened to students; asked student opinion; drew on student knowledge.

Mentioned once: encouraged students; talked at students; addressed topic rather than student; teacher gave feedback to student; peer tutoring; summarised notes from student group; students appeared OK working at own pace.

Total site observations = 37

Teachers' accounts of their actions in the classroom are summarised in table 3.7.2 and show that they were concerned to keep theory short; use practical approaches; give students something they were interested in: let the student choose projects in a fairly free classroom atmosphere; set up activities with the student (CBT); approach students slowly to gain their confidence; keep instruction basic and not provide too much instruction at once.

Table 3.7.2: Teachers' descriptions of their approaches during the lesson (TQ1a and TQ1b, both multiple response)

TEACHERS' APPROACHES DURING LESSON	No.	%
Keep theory short	7	15
Use practical approaches	7	15
Give students something they are interested in	4	8
Student choose projects, fairly free class room	4	8
Set up activity with the student (CBT)	3	6
Approach softly to gain confidence	3	6
Keep basic, not too much instruction at once	3	6
Involve them a lot	3	6

Mentioned twice: use icebreaker to get started; do not assume what their level is; give plenty of hands-on work; lesson reviewed past work; use different approaches to maintain interest; try to get the student to discover the answer; use self-paced packages and learning guides; follow the module closely, it works; make it as interesting as possible; give prior notice of an assessment; try to break theory up (JSSTAFE course); select the content carefully due to time lack; build on their work experience; illustrate with models.

Mentioned once: need to be pulled into line; give achievable goals to students; give some leeway, to all, equally; find and build on their goals and experience; treat them as 16-to-20 year olds; use teamwork approach; find how to extend their confidence; be flexible; nag them a bit then they're grateful later; it was a teacher-controlled teaching style (said by a teacher); give more background to lift standards; do constant revision; keep assessment relevant and simple; begin with a subject that interests them; the lesson was on the theory; use hand-outs/reference text; build foundations and use revision; use brainstorming and mindmapping; concentrate on basic stuff; indoctrinate them into safety; encourage participation so they help each other; it was a structured lesson with theory and lab work; follow the workbook; vary teaching to suit the student's ability; achieve a skill in the lesson; let the kids work at their own rate; it's all student-centred; they are all at different stages/modules; it's a theory-based subject; do discussion and then research; self-paced to cater for varying abilities; discuss application to industry, use demonstration; review past 4 weeks' work before examination; use an integrated approach; rely a lot on employers' feedback; use excursions and videos; start at normal level; do revision first then a learning outcomes test; hands on; increase difficulty of tasks; encourage self-assessment and direction setting; they learn more if it is discussion and not note taking; adults easier to teach.

Total students = 113

Table 3.7.3 gives observers' classification of teachers' teaching style. Teachers were mainly characterised by the observers as: approachable (76%); informal (68%); non-authoritarian (54%); teacher-directed (51%); student-centred (35%) friendly (27%), reserved (27%), spontaneous (24%), and mainly formal (22%).

Table 3.7.3: Observers' classification of teaching styles (SiteQ4, multiple response)

TEACHING STYLES	No.	%
Approachable	28	76
Informal	25	68
Non-authoritarian	20	54
Teacher-directed	19	51
Student-centred	13	35
Friendly	10	27
Reserved	10	27
Spontaneous	9	24
Mainly formal	8	22
Controlled	7	18
Authoritarian	6	16
Distant	5	14
Focussed	4	11
Humorous	4	11
Interactive	2	5
Relaxed	2	5
Responsive to student interests	2	5

Mentioned once: Knowledgeable; neutral approach to conflict; determined by mixed class.

Total site observations = 37

The data in the above table are compared with students' rating of the course as 'very satisfactory' or 'satisfactory' (none of the students rated the course as 'borderline', 'unsatisfactory' or 'very unsatisfactory').

Table 3.7.4 shows that where teaching style was classified by the observers as approachable, informal or non-authoritarian, students' ratings of the course as 'very satisfactory' or 'satisfactory' were higher than was the case when the teaching style was 'authoritarian', however, the numbers of respondents (5) was small with regard to the classification 'authoritarian'.

Table 3.7.5 shows that the teacher–student interaction in the 37 observed teaching and learning episodes were focussed on the task (62%); reflected a master–novice relationship; showed the teacher relating to students (59%); and were characterised by the observers as 'bi-directional' (41%) meaning that the teachers' attitudes and strategies shaped the students' behaviour, and the students' attitudes and strategies shaped the teachers' behaviour.

Table 3.7.4: Observers' classification of teaching styles compared to students' rating of course (all States)

STUDENT RATING OF COURSE	OBSERVERS' CLASSIFICATION OF TEACHING STYLES							
	Approachable		Informal		Non-authoritarian		Authoritarian	
	No.	(%)	No.	(%)	No.	(%)	No.	(%)
Very satisfactory	32	(28)	25	(22)	26	(23)	1	(1)
Satisfactory	15	(13)	14	(12)	8	(7)	4	(4)
Missing	66	(58)	74	(65)	79	(70)	108	(96)

Total site observations = 37. Total students = 113

Table 3.7.5: Observers' classification of teacher–student interaction (SiteQ8)

TEACHER/STUDENT INTERACTION	No.	%
Focussed on the task	23	62
Master–novice relationship	22	59
Teacher relating to students	22	59
Bi-directional*	15	41
Teacher shows understanding in interactions	9	24
Part revision	6	16
Mutual respect, students and teacher	5	14
Teacher/student display mutual disrespect when student is not concentrating	4	11
Related well to student but not at student level	3	8
Teacher not relating to students	2	5
Teacher let student work on task	2	5
Practice	2	5
Teacher treating students as adults	1	3
Little interaction sought by teacher	1	3

Total site observations = 37. *Teachers and students shape each others' actions and strategies.

The data in the above table are compared with students' rating of the course as 'very satisfactory' or 'satisfactory' (none of the students rated the course as 'borderline', 'unsatisfactory' or 'very unsatisfactory'). Table 3.7.6 shows that where teaching style was classified as bi-directional, master–novice or practical, students' ratings of the course were 'very satisfactory' or 'satisfactory'. (As noted previously, no students rated the course as 'borderline', 'unsatisfactory' or 'very unsatisfactory')

Table 3.7.6: Observers' classification of teacher–student interaction compared to students' rating of course (all States)

STUDENT RATING OF COURSE	OBSERVERS' CLASSIFICATION OF TEACHER/STUDENT INTERACTION					
	Bi-directional		Master–Novice		Practical	
	No.	%	No.	%	No.	%
Very satisfactory	20	18	20	18	26	23
Satisfactory	10	9	8	7	8	7
Missing	83	73	85	75	79	70

Total site observations = 37. Total students = 113

Table 3.7.7 below gives the observers' categorisation of the classroom atmosphere or climate as formal (27%) or relaxed (14%). There was 59 per cent of cases missing.

Table 3.7.7: Observers' categorisation of classroom atmosphere or climate (SiteQ9)

CLASSROOM	No.	%
Formal	10	27
Relaxed	5	14
Missing	22	59
Total	**37**	**100**

Table 3.7.8 summarises the views of observers on what was revealed about student learning and shows that in 19 per cent of the observations, theory was covered then applied; in 16 per cent of the observations the student learning was by practical means; and for eight per cent of instances learning by hands-on approaches appeared to be successful for students.

Students' views of the qualities which make a good vocational teacher are given in table 3.7.9. These qualities include being able to relate to students as an equal and to be friendly (29%); be knowledgeable and have industry experience (27%); have good communication skills (26%); be fair, patient, tolerant and accepting (18%); be able to involve students and make sure they understand; be understanding and caring; and treat students with respect, like adults. Other qualities included being able to take control of the class (8%), being organised (6%), being able to teach properly (4%) being motivated (2%) and using demonstration (1%).

Table 3.7.8: Observers' views of what was revealed about student learning (SiteQ10, multiple response)

STUDENT LEARNING OBSERVED	No.	%
Theory covered, then applied	7	19
Students learn by practical means	6	16
Hands-on learning is good	3	8
Teacher relating to students helps learning	2	5
Personalised, teaching one-to-one is good	2	5
Peer help useful	1	3
Mentioned once: peer help is useful; students respond to good expectations of them; structured learning helps low-ability students; if interested, pay attention better; independent learning is all right for students; student learn by following directions; getting student to think ahead is good practice.		
Missing	10	27

Total observations = 37

Table 3.7.9: Students' views of the 'good' vocational teacher (SQ9, multiple response)

THE 'GOOD' TEACHER	No.	%	Missing
Relates to us as equal friendly etc.	33	29	80
Knowledgeable, industry experience	31	27	82
Has communication skills	29	26	84
Is fair, patient, tolerant, accepting	20	18	93
Involves us, makes sure we understand	17	15	96
Is understanding, caring	13	12	100
Treats us with respect, like adults	13	12	100
Can control class	9	8	104
Is organised	7	6	106
Able to teach properly	5	4	108
Is motivated	2	2	111
Mentioned once: Good personality; and demonstrates			

Total students = 113

In contrast to the qualities of the good teacher, students perceived the 'not good' teacher (table 3.7.10) was not emotionally supportive (18%); or was unclear or gave no explanations (17%). Other 'not good' characteristics were being not prepared or organised (5%), not treating students equally (3%), not making learning interesting (3%), lacking a sense of humour (2%), lacking impartiality (1%). One deaf student noted the lack of signing skills in teachers.

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Table 3.7.10: Students' views of the 'not good' teacher (SQ10, multiple response)

THE 'NOT GOOD' TEACHER	No.	%	Missing
Not emotionally supportive	20	18	93
Unclear, no explanations	19	17	94
Not prepared, or organised	6	5	107
Not treat students equally	3	3	110
Not make learning interesting	3	3	110
Lack sense of humour	2	2	111
Lack impartiality	1	1	112
Lack signing skills (deaf student)	1	1	112
Other	22	19	91

Total students = 113

Table 3.7.11 below shows that 65 per cent of students thought that the teacher did something different from other teachers to make the course interesting. Note the 'other teachers' would, in all probability, have been teachers of general subjects which the students undertake.

Table 3.7.11: Students' views on whether the vocational teacher makes the course/subject interesting (SQ11a)

MAKE COURSE INTERESTING?	Number	%
Yes	74	65
No	23	20
Sometimes	3	3
Missing	13	12
Total	**113**	**100**

The differences which students perceive in what the teacher did to make the course/subject interesting are shown in table 3.7.12 and include: teacher explains clearly (14%); uses humour, is easy to get on with and relaxed (14%); varies the learning (10%); treats us like adults (9%); and uses group activities and discussions (8%).

Table 3.7.12: Students' views: What the teacher does to make the course interesting (SQ11b, multiple response)

MAKES COURSE INTERESTING	No.	%	Missing
Teacher explains clearly	16	14	97
Uses humour, easy get on with, relaxed	16	14	97
Varies the learning	12	10	101
Treats us like adults	10	9	103
Uses group activities, discussions	9	8	104
Makes learning interesting	3	3	110
We work at own pace	3	3	110
Gives individual help	5	4	108
Uses practical approach	1	1	112
Gives us home activities	1	1	112
Is organised	1	1	112

Total students = 113

Table 3.7.13 below shows that more than half of the students (57%) said that the teacher makes learning easier or better for them. There was no difference between TAFE and schools on this question.

Table 3.7.13: Students' views: Does the teacher makes learning easier or better? (SQ12a)

MAKE LEARNING INTERESTING?	Number	%
Yes	64	57
No	4	4
Don't know	3	3
Not really	6	5
Sometimes	2	1
Missing	34	30
Total	**113**	**100**

Table 3.7.14 gives students' perceptions of how vocational teachers make learning easier. What they do is to: explain, demonstrate and show shortcuts (28%); be approachable, helpful and easy to get on with (12%); be good teachers who know their subject (7%); and use variety in teaching (6%).

Table 3.7.14: Students' comments on what the teacher does to make learning easier (SQ12b, multiple response)

HOW MAKE LEARNING EASIER	No.	%	Missing
Explain, demonstrate, show shortcuts	32	28	81
Is approachable, helpful easy to get on with	13	12	100
Good teacher, knows the subject	8	7	105
Uses variety in teaching	6	6	106
Use videos, hand-outs, current information	6	5	107
Understands our needs	4	4	109
Works in groups	2	2	111
Treats us like adults	1	1	112

Total students = 113

Table 3.7.15 below shows that half of the students (52%) believe that the teacher understands how they learn. Twice as many school students (66%) than TAFE students (35%) believed the teacher understands how they learn.

Table 3.7.15: Students views: Does the teacher understand how you learn? (SQ13)

TEACHER UNDERSTAND	TAFE		School		Total	
	No.	%	No.	%	No.	%
Yes	18	35	41	66	59	52
No	3	6	-	-	3	3
Don't know	5	10	1	2	5	4
Sometimes	4	8	-		4	4
Missing	21	41	20	32	42	37
Total	**51**	**100**	**62**	**100**	**113**	**100**

Table 3.7.16: Students' views: What teachers do to convey that they understand how the student learns (SQ13b, multiple response)

TEACHER SHOW UNDERSTANDS	No.	%	Missing
Understands our needs	20	18	93
Good teacher	14	12	99
Gives individual help	5	4	108
Gets us to take charge of own learning, and say what our needs are	4	4	109
Is not a good teacher	2	2	111
Other	5	4	108

Total students = 113

Table 3.7.16 shows that teachers were seen to understand student needs (18%); and were a good teacher (12%).

The next two tables give teachers' views of initial vocational education students (tables 3.17.17 to 3.7.20). Table 3.7.17 shows that 83 per cent of teachers perceived differences in vocational students compared to general students.

Table 3.7.17: Did teachers perceive differences in the vocational class compared to general classes? (TQ2a)

DIFFERENCE	Number	%
Yes	40	83
No	4	8
Missing	4	8
Total	**48**	**100**

Table 3.7.18 gives teachers' responses when asked to comment on the differences between vocational and general students. The main differences were: the course was practical (17%); the students had less maturity, experience and motivation (13%); it was necessary to be more student-centred and less teacher-directed (13%). Teachers noted that some JSSTAFE students have less maturity. Other factors mentioned by teachers (2%) were: that general students have greater control over their learning; there is a need to be alert to the problems of vocational students; that CBT outcomes are more precise; teaching needs to be hands-on; vocational students are less motivated and are less academic.

Table 3.7.18: Teachers' perceptions of differences in their vocational class compared to general classes (TQ2b, multiple response)

VOCATIONAL CLASS DIFFERENCES	No.	%
Basically it's a practical course	8	17
Less maturity, experience, motivation	6	13
More student-centred, less teacher-directed	6	13
JSSTAFE some have less maturity	3	6

Mentioned twice: Class is more female-oriented; others have greater control over learning; need be more alert to their problems; CBT outcomes are more precise; need to be hands-on teaching; mature students can be more motivated; vocational students are not academic but quite positive.

Mentioned once: Other students more structured and career-oriented; have mature students, females, so good balance in class; class work is neater than others; class is unresponsive; it's generally self-paced learning; adults easier teach than 16–20-year-olds; class has variety of ages etc, lots of problems; hard to motivate now out of school; work better in small groups, helps attention; they're a challenge, they're fun; class is no different; a of it lot is doing not just reading/writing; be flexible, get operating as team; student are hand fed; totally individualised, teacher facilitates; short attention span, about 20 minutes; they lack work experience; measurements are more straightforward; encourage independent learning; where their interests lie, they chose it; student-centred, teacher as facilitator; and they see it as more relevant.

Total teachers = 48

SUMMARY

Section 3.7: What are the main teaching strategies currently being used in initial vocational education?

Teachers' actions in the classroom

The actions of teachers in the classroom, categorised by the observers, were mainly: to help students as required (32% of teachers); answer questions (24%); explain (16%); organise the students into groups; be organised; and question students to check understanding (14% each). Eleven per cent of teachers: helped students when asked; involved students in teaching; related industry experiences; were knowledgeable about subject; showed willingness to help; used overhead transparencies; and helped individual students. Eight per cent of teachers were supportive of student effort; praised students; pulled students into line; needed to quieten noisy student; used humour; and drew out student responses to summarise information (table 3.7.1).

Teachers' accounts of their actions during the lesson

Teachers' accounts of their actions during the lesson in the classroom reveal they were concerned to: keep theory short and to use practical approaches (15% each); give students something they were interested in and to let the student choose projects in a fairly free classroom atmosphere (8% each) and set up activities with the student (CBT); approach students gently to gain their confidence; keep instruction basic and not provide a lot of instruction at once (6% each) (table 3.7.2).

Observers' classification of the styles of teaching

The classroom observers classified teaching styles as: approachable (76%); informal (68%); non-authoritarian (54%); teacher-directed (51%); student-centred (35%) friendly (27%), reserved (27%) and mainly formal (22%) (table 3.7.3).

When the observers' classification of styles of teaching—approachable, informal, non-authoritarian, and authoritarian—were compared with students' rating of the course ('very satisfactory', 'satisfactory') it was found that students gave higher ratings of the course as 'very satisfactory' or 'satisfactory' for teaching styles classified as approachable, informal or non-authoritarian, than the authoritarian teaching style; however, the numbers of respondents (5) was small with regard to the classification 'authoritarian' (table 3.7.4). (No students rated the course as 'borderline', 'unsatisfactory' or 'very unsatisfactory').

Observers' classification of teacher–student interaction

The interactions between teachers and students in the 37 observed teaching and learning episodes were: focussed on the task (62%); reflected a master–novice relationship (59%); showed the teacher relating to students (59%); and were characterised by the observers as 'bi-directional' (41%) meaning that the teachers' attitudes and strategies shaped the students' behaviour and the students' attitudes and strategies shaped the teachers' behaviour (table 3.7.5).

Students also gave high ratings of their course/subject as 'very satisfactory' or 'satisfactory' for teaching and learning situations where the teaching style was classified by the observers as bi-directional, master–novice or practical (table 3.7.6).

Observers' classification of classroom atmosphere or climate

The observers classified classroom atmosphere or climate as: formal (27%) or relaxed (14%) (table 3.7.7).

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Observers' views of what was revealed about student learning
For 19 per cent of the classroom observations, theory was covered then applied. For 16 per cent of observations student learning was by practical means, and for eight per cent of observations learning by hands-on methods appeared to be successful for students (table 3.7.8).

Students' views of the qualities which make a good vocational teacher
Students liked teachers who could relate to them as equals and to be friendly (29%). They liked teachers to be knowledgeable and have industry experience (27%); have good communication skills (26%); be fair, patient, tolerant and accepting (18%); be able to involve them and make sure they understand (15%); be understanding and caring; and treat students with respect, like adults. Other qualities included being able to take control of the class (8%); being organised (6%); being able to teach properly (4%); being motivated (2%); and using demonstration (1%) (table 3.7.9).

In contrast to the qualities of the good teacher, students perceived the 'not good' teacher as being emotionally unsupportive (18%); unclear or as giving no explanations (17%). Other perceptions of this type of teacher was as a person who was not prepared or organised (5%); did not treat students equally (3%); did not making learning interesting (3%); lacking a sense of humour (2%); and lacking impartiality (1%) (table 3.7.10).

Students' views about whether the vocational teacher makes the course interesting
Most students (65%) thought that the teacher did something different from other teachers to make the course interesting. Note the 'other teachers' would, in all probability, have been teachers of general subjects which the students undertake (table 3.7.11). Learning was made easier, according to students, when: the teacher explains clearly (14%); uses humour, is easy to get on with and relaxed (14%); varies the learning (10%); treats us like adults (9%); and uses group activities and discussions (8%) (table 3.7.12).

Does the teacher make learning easier?
More than half of the students (57%) said that the teacher makes learning easier or better for them (table 3.7.13). Methods used by teachers, according to students, were: explain, demonstrate and show shortcuts (28%); be approachable, helpful and easy to get on with (12%); be good teachers who know their subject (7%); and use variety in teaching (6%) (table 3.7.14).

Does the teacher understand how students learn?
Half of the students (51%) believe that the teacher understands how they learn (table 3.7.15). This was conveyed by: teachers being seen to understand student needs (18%); being a good teacher (12%); giving individual help (4%); and getting students to take charge of their learning (table 3.7.16). Twice as many school students (66%) than TAFE students (35%) believed the teacher understands how they learn.

Teachers' views of vocational students
Eighty-three per cent of teachers perceived differences in vocational students compared to general students (table 3.7.17). The main differences were: the course was practical (17%); the students had less maturity, experience and motivation (13%); it was necessary to be more student-centred and less teacher-directed (13%). Teachers noted that some JSSTAFE students have less maturity. Other factors mentioned by teachers (2%) were: that general students have greater control over their learning; there is a need to be alert to the problems of vocational students; that CBT outcomes are more precise; teaching needs to be hands-on; vocational students are less motivated and are less academic (table 3.7.18).

3.8 What assumptions do teachers make about how students learn?

Table 3.8.1 below shows that the majority of teachers (52%) believe that vocational students learn best by hands-on learning. Fifteen per cent of teachers said a variety of teaching styles helps students to learn, six per cent of teachers said that learning depends on student maturity and that it is necessary to relate the topic to the workplace. Other comments included used of demonstration and practice; teaching the fundamentals; relating teaching to everyday life; exposing students to industry; and use of reinforcement and repetition (4% each).

Table 3.8.1: Teachers' perceptions about how students learn best (TQ3, multiple response)

LEARN BEST	No.	%
Learn best by hands-on	25	52
Use variety of teaching styles	7	15
Depends on student maturity	3	6
Relate the topic to their workplaces	3	6
Demonstration and practice	2	4
Teach the fundamentals	2	4
Relating it to their everyday life	2	4
Ideally should be exposed to industry	2	4
Reinforcement and repetition	2	4

Mentioned once: Need to be babied; we do an 8-hour day, their brains need rest; practical, forget theory; student lack life experience, can miss point; a relaxed group learns better; help them learn from their mistakes; group activities or training games; a lot has to be done as group work; they prefer practical to theory; self-motivated learn better from practical; this age group self-paced not ideal; writing books and doing things; they prefer to work in groups; there is no best way to teach you have top students and slow students in same class; integrate theory/practical.

Table 3.8.2 below shows that 40 per cent of teachers rated student motivation as high, 25 of teachers rated student motivation as medium and eight per cent of teachers rated student motivation as low. A further 20 per cent of teachers said that student motivation covers the whole range (low to high).

Table 3.8.2: Teachers' perceptions of student motivation (TQ9)

STUDENT MOTIVATION	No.	%
High	19	40
Medium	12	25
Low	4	8
Motivation covers whole range	10	21
Missing	3	6
Total	**48**	**100**

Table 3.8.3 below shows that 12 per cent of teachers drew attention to the mixture of students in the class with a range of abilities (6%); different learning styles (4%); a few with language difficulties (4%); some students smart and some lazy (4%); and some students needing to be shown and others able to learn by themselves (4%); and some students being very practical minded (4%). Teachers perceive that students learn by doing (8%), and that they need to do a lot more practical exercises with the students (6%).

Table 3.8.3: Teachers' perceptions of differences in the way students learn (TQ10, multiple response)

DIFFERENCES IN WAY STUDENTS LEARN	No.	%
We've got a mixture of kids	6	12
They actually learn by doing	4	8
Quite a range of abilities	4	6
Teacher needs to do a lot more practical exercises	3	6
Some need a lot of support	3	6
Some are smart, some are very lazy	2	4
Some need showing, others learn by themselves	2	4
Some are very practically minded	2	4
Many different learning styles	2	4
A few have language difficulties	2	4

Mentioned once: Level knowledge about specific things; some learn practical easier than others; some are really motivated/interested; for people with disabilities/problems, simplify; if have maths ability then pick up electronics better; some short attention spans, some none; high school kids want to get notes into their book; motivation from external experiences; some really motivated, know their needs; some not want to be here, need pampering; maths ability helps engineering; couple that are natural learners; it's in the basic training get at school; willingness to learn is the difference; student negative, aggressive or distracting; not motivated when come to school; everything on individualistic basis; none, they are no different; we have all age groups here; some more confident, get right first; some are interested, put work into it; a lot of kids cannot cope; huge differences in skills held; and (class is) not as extreme as normal TAFE group.

Total students = 113

Table 3.8.4 shows that teachers cater for students with learning difficulties by simplifying teaching into step-by-step procedures (23%); providing individual attention and making sure that students understand (19%); giving demonstration and explanation, especially if there are language difficulties (16%). Teachers noted that students learn from peers (12%); that they should be available outside teaching hours to give help (12%); and be flexible and use self-paced learning (8%). Other factors mentioned by four per cent of teachers were to use different strategies in relation to giving explanations, to offer tutorials, to get students to solve their own problems, use role-play, analyse the group needs and always ask if students have a problem.

Table 3.8.4: How teachers cater for students who have difficulty understanding things (TQ11, multiple response)

CATER FOR STUDENTS WITH DIFFICULTY	No.	%
Simplify it, go through step by step	11	23
Individual attention, sure they understand	9	19
If language difficulties, give demo/explanation	7	16
Kids learn from other kids	6	12
Be available outside school hours to help	6	12
Be flexible, use self-paced learning	4	8
Diff strategies explaining, be balanced	3	6
Offer tutorials to them	3	6
Get them solve own problem, help	2	4
A bit of role play	2	4
Analyse the groups needs	2	4
They need handouts/worksheets	2	4
Always ask if they have a problem	2	4

Mentioned once: Get the class going; accept there are different levels in class; set goals; group brainstorm feedback; give task, check they understand it; and disabilities people help support staff.

Total teachers = 48

SUMMARY

Section 3.8: What assumptions do teachers make about how students learn?

The majority of teachers (52%) believe that vocational students learn best by hands-on learning. Fifteen per cent of teachers said a variety of teaching styles helps students to learn, six per cent of teachers said that learning depends on student maturity and that it is necessary to relate the topic to the workplace. Other comments included used of demonstration and practice (4%); teaching the fundamentals (4%); relating teaching to everyday life (4%); exposing students to industry (4%); use of reinforcement and repetition (4%) (table 3.8.1).

Student motivation was rated by teachers as follows: high (40%), medium (25%) and low (8%). However, 20% of teachers said that student motivation covers the whole range (low to high) (table 3.8.2). Teachers (12%) noted that classes contain a mixture of students. Teachers (8%) said that students learn by doing (table 3.8.3).

Teachers cater for students with learning difficulties by simplifying teaching into step-by-step procedures (23%); providing individual attention and making sure that students understand (19%); giving demonstration and explanation especially if there are language difficulties (16%). Teachers noted that students learn from peers (12%), that they should be available outside teaching hours to give help (12%) and be flexible and use self-paced learning (8%). Other factors mentioned by four per cent of teachers were to use different strategies in relation to giving explanations, to offer tutorials, to get students to solve their own problems, use role-play, analyse the group needs and always ask if students have a problem (table 3.8.4).

3.9 What determines the strategies being used by teachers?

Table 3.9.1 below shows that teachers aimed to find students' needs and adapt to them (13%); and varied practices that had worked before (13%); and sought to meet the syllabus requirements and competencies (10%). Other determinants were: the topic and whether to break it up or not; the ability of the student and prior knowledge; and the fact that students learn differently and different teaching methods are needed. Other factors mentioned by four per cent of teachers were: to explain the course, get feel of their level; go through it step by step; hands-on is really important to kids; mainly learning styles of the student; the module itself; respond best to workplace learning; and (use) what makes them learn not regurgitate.

Table 3.9.1: Determinants of teachers' teaching strategies (TQ4, multiple response)

DETERMINANTS OF TEACHING STRATEGIES	No.	%
Find student needs, adapt to them	6	13
Vary practices that have worked before	6	13
Syllabus requirements, competencies	5	10
Competency teaching and the group	4	8
Topic and whether have to break it up	4	8
Ability of student, their prior knowledge	4	8
Students learn differently, use different methods	4	8
Will be chef so must learn to be in charge	3	6

Mentioned twice: explain course, get feel of their level; go through it step by step; hands-on is really important to kids; mainly learning styles of the student the module itself; respond best to workplace learning; what makes them learn not just regurgitate.

Mentioned once: Extremely basic, the students determine it; availability of resources; student interests, responses (child care); depends on student understanding; what they see and do; get them involved; If concept is hard, back to basics; take note if students are younger; throw them in the deep end; respond to (many) differences of student; kids understand when put in their terms; tend to teach to the middle group; start with an orientation.

Total teachers = 48

Table 3.9.2 shows that 25 per cent of teachers regard the best way to teach vocational content is by practical means; to relate teaching to what the students know already (10%) and to integrate theory and practical (10%). Using different ways of doing things was mentioned by six per cent of teachers. Other factors mentioned by four per cent of teachers were: find out what have done at school; adopt a light-hearted approach, non-threatening; be basic, simplify everything; demonstrate then they do it; base teaching on career they aim for; summarise content, main objectives; get kids out into a real life situation; and (use a) student centred to teacher centred approach.

Table 3.9.2: Teachers' views of the best way to teach vocational content (TQ5, multiple response)

BEST WAY TO TEACH	No.	%
The more practical the better	12	25
Relate to what already know/interests them	5	10
It's integrated theory, bit of practical	5	10
Using three different ways doing things	3	6

Mentioned twice: Find out what have done at school; adopt a light-hearted approach. Non-threatening; be basic, simplify everything; you demonstrate then they do it; base teaching on career they aim for; summarise content, main objectives; get kids out into a real life situation; student-centred to teacher-centred.

Mentioned once: Interaction with the student; depends on topic and learning abilities; need a lot of motivation; meet what industry wants; try to lift up the bottom 2/3 to pass; same methods would normally use; the old show and tell method; get them to contribute, work together; find out what they know/experience a little bit of input from me; concentrate on the good student; by repetitious example; have to go and research new to field; a variety of text books and methods; involve student in collecting information; working through modules; and let them know are here to assist them.

Total teachers = 48

The next two tables examine changes by teachers to their vocational teaching approach. Table 3.9.3 below shows that most teachers (75%) have changed their vocational teaching approach in recent years but 15 per cent had not done so.

Table 3.9.3: Have teachers changed vocational teaching approach in recent years? (TQ6)

CHANGED	Number	%
Yes	36	75
No	7	15
Not know, not sure	1	2
Missing	4	8
Total	**48**	**100**

Changes which teachers have made to their vocational teaching approach in recent years (table 3.9.4) are as follows: 21 per cent have noted the need to be more practical but also to teach theory; 12 per cent of teachers now regard themselves as a facilitator; eight per cent note that their approach is different due to the introduction of competency-based training and assessment; and eight per cent note that their teaching is now a lot less structured and more flexible. Other factors mentioned by four per cent of teachers were: practical demonstration; made it as practical as I could; some JSSTAFE students had to be taught like high school students; some JSSTAFE students a bit wayward as they had not made career decision yet; if student not follow have to go back; be flexible, casual, build self-esteem; and one-on-one (teaching) is best.

Table 3.9.4: How teachers have changed their vocational teaching (TQ6, multiple response)

HOW CHANGED VOCATIONAL TEACHING	No.	%
Need to do more practical but theory too	10	21
Regard myself as a facilitator	6	12
Different approach because CBT	4	8
Lot less structured and more flexible	4	8
Practical demonstration	2	4
Made it as practical as I could	2	4
(JSSTAFE) had to teach like high school	2	4
JSSTAFE, bit wayward as had not made career decision yet	2	4
If student not follow have to go back	2	4
Be flexible, casual, build self-esteem	2	4
One on one is best	2	4

Mentioned once: my lessons are more structured; Year 11 students don't know what want to do; practical, to gain commonsense; syllabus as basis but info changes; tried to improve syllabus; changed my teaching in response to student; we've improved on theory (computers); I've written notes for student to get; we give them packages; like use an industry guest speaker; was originally 4 h theory, now 4 h practical; and get them doing things.

Total teachers = 48

The next three tables (tables 3.9.5–3.9.7) give teachers' best and worst teaching experiences. The tables show teachers' pride when a student is successful, gains work experience, and learns, their pride in being able to work as a teacher and seeing non-mainstream students successful. Teachers' worst experiences (table 3.9.7) were: dealing with discrimination occurring within the student group; inability to achieve certain goals due to lack of resources; and difficulty in motivating lower ability students.

Table 3.9.5: Teachers' best experience as a vocational teacher (TQ7, multiple response)

BEST EXPERIENCE AS TEACHER	No.	%
A student being successful	9	19
The work experience which was valuable	5	10
Last year the first student graduated	3	6
Seeing student learn things	3	6
Everyday is a good experience	3	6

Mentioned twice: Student who said he enjoyed my classes; the look of satisfaction when they graduate; seeing student realise he had done well at what he was doing; taking Year 12 group to some site visits; the work placement showed where they were at (showed their level of knowledge); seeing kids capable of work experience; being able to connect to TAFE expertise.

Mentioned once: Teaching unemployed new skills; when first started had to find office equipment; finishing a practical (building) task; student confident in their skills; doing the role play; get foot in the job door with work placement; seeing a tradesperson who gets promoted; enjoy young people, enjoy their hope; enjoy seeing the student get involved; keeping, motivating student; helping those who want to learn; student being part of catering assignments; seeing a student change for the good; a student who sticks with it; student who improved to get an 'A'; an uninterested student got a career; working with the student; student saying they really enjoyed course; it's a satisfying job.

Total teachers = 48

Table 3.9.6: Why was it your best teaching experience? (TQ7, multiple response)

WHY WAS IT BEST	No.	%
Student able to get a job	4	8
Kids' pride in what they had done	4	8
Seeing non-mainstream kids' success	4	8
Student came out feeling confident	3	6
Seeing kids building up self-esteem	3	6
Getting student interested	3	6
Seeing them understand	3	6
Student successful in work placement	2	4

Mentioned once: Being able to do that practical stuff; the work placement; kids really enjoyed the experience; employer saying the kids are good; ordinary student finishing OK; other students not make you think as much; teaching student a bit of life experience; seeing student gain confidence with people.

Total teachers = 48

Table 3.9.7: Teachers' worst experience as a vocational teacher (TQ8a, multiple response)

WORST EXPERIENCE AS TEACHER	No.	%
Discrimination occurring in student group	4	8
Inability to do things (lack equip, etc)	3	6
Motivating lower ability student	3	3
Not able to trust immature student on work placement	3	3
Student who has personal tragedy	3	3
Thrown into teaching not knowing	3	3
Teaching 29 hours/week for 6 months	2	2
Unresponsive student group	2	2
Student underachieving in work placement	2	2

Mentioned once: A failed demonstration in front of student; taking disinterested student to building site; student who could not afford uniforms; not having necessary skills (cookery); finding good work experience; student with genuine problems; missing out on promotion; casual relief teaching with disinterested student; disappointed with system standards; dealing with difficult student; having a rude group of students; unresponsive student or student who disappears; student who asks irrelevant questions; standards not as good as industry; kids who let other kids down; grievance process/student unhappy assessment; some of the students' (bad) attitudes; student who has a personal tragedy; getting their work in on time; some go berserk and some not; promoting work placement to community; course sometimes unrealistic; had student from hell one year.

Total teachers = 48

Table 3.9.8 below shows that 46 per cent of teachers said staff were involved in making course decisions.

Table 3.9.8: Are staff involved in making course decisions? (TQ12)

STAFF INVOLVED	Number	%
Yes	22	46
No	18	38
Missing	8	16
Total	**48**	**100**

Table 3.9.9 below shows that 56 per cent of teachers reported problems with the way the course was designed.

Table 3.9.9: Do you have any problems with the way the course is designed? (TQ13a)

PROBLEMS COURSE DESIGN	Number	%
Yes	27	56
No	17	35
Missing	4	9
Total	**48**	**100**

Problems with course design reported by teachers are given in table 3.9.10 below. The main problems were lack of information on what to achieve in the course; the theory relating to occupational health and safety; difficulty in devising activities to meet learning outcomes; and lack of time or physical resources, facilities or tools.

Table 3.9.10: What are the problems with way course is designed? (TQ13b)

PROBLEMS WITH COURSE DESIGN	No.	%
Not enough information on what to achieve	4	8
A lot of theory on OH&S	4	8
Difficult to devise activities to meet learning outcomes	3	6
Not enough time allocated	3	6
No physical resources/facilities/tools	2	4

Mentioned once: No continuity in how log book is divided; kids do not like way course is supposed to flow; TAFE programs are self-paced, not ours; teacher knowledge and facilities needed are unclear; students don't have the background; too many forms; with national modules people can do anything; high weight on practical not on student's research; there are a lot syllabus overlaps which gives pace problems; difficulty getting kids into workplace learning; certain parts not as essential as others; not like having to work with modules; it's difficult to make course exciting; assessment procedure lacks continuity; the syllabus is vague and obscure; not like the littie modules; every module different not weighted; difficult to gear it to industry standard; room for extension in the course; shortcomings compared other States; requirements don't suit kids' needs; some administration modules very outdated.

About half of the teachers interviewed reported difficulties with how the syllabus was delivered (table 3.9.11), and mentioned the difficulties as being that many assessments are not practical; difficulty with time and free periods; and the need to make work experience longer.

Table 3.9.11: Do you have problems with the way the syllabus is delivered? (TQ14a)

PROBLEMS SYLLABUS DESIGN	Number	%
Yes	22	46
No	14	29
Missing	12	25
Total	**48**	**100**

Table 3.9.12: What are the problems with the way the syllabus is delivered? (TQ14b, multiple response)

PROBLEMS WITH SYLLABUS DELIVERED	Number	%
Many assessments are not practical	2	4
Difficult with time and free periods	2	4
Make work experience longer	2	4

Mentioned once: Designed for block release, no time for day release; kids need global idea of the module; cannot exactly teach industry wants; employment options are closing down; not enough info from board of studies (Victoria); issues costs, work placements, assessment; credit transfer difficult between TAFE/schools; difficult to teach in sections when computer access is difficult to timetable; best way to implement syllabus, do a project; a big chunk of it is sit-down theory; students lack information getting skills; amount of work in modules changes; need continually to modify each syllabus; resources are a big problem; assessments are a real pain; the room seating layout is a problem need to shuffle it around to get a more natural flow; module too long; too many kids in class are at different levels.

Total teachers = 48

Teachers were asked if the equipment was sufficient for the course? Slightly more than half of the teachers said the equipment was not sufficient (table 3.9.13 below).

Table 3.9.13: Teachers' views about course equipment (TQ15a)

EQUIPMENT SUFFICIENT	Number	%
Yes	20	42
No	27	56
Missing	1	2
Total	**48**	**100**

The resources which teachers wanted included equipment (17%); space (10%); resources/materials (6%); up-to-date equipment (6%), increased computer access (4%); and increased support with equipment (table 3.9.14).

Table 3.9.14: What resources are needed? (TQ15b, multiple response)

RESOURCES NEEDED	No.	%
More equipment needed	8	17
More space needed	5	10
Need more resources/materials	3	6
Up-to-date equipment	3	6
More computer access	2	4
More resources needed	2	4
Support with equipment	1	2

Total teachers = 48

Half of the teachers interviewed said their teaching varied from the syllabus (table 3.9.15 below).

Table 3.9.15: Does your teaching vary from the syllabus? (TQ16a)

TEACHING VARY FROM SYLLABUS	Number	%
Yes	24	50
No	15	31
Missing	9	19
Total	**48**	**100**

The main way that teachers varied their teaching from the syllabus was expanding it and getting the student to look further (table 3.9.16 below).

Table 3.9.16: How does your teaching vary from the syllabus? (Q16b, multiple response)

HOW TEACHING VARY FROM SYLLABUS	No.	Percent
Expand it...get the student to look further	7	15
Modify your tactics to get learning outcomes	2	4
Know that student with special needs often have language problems	2	4
Only if find area interests most of class	2	4
Generally put more into it but stick to it	2	4

Mentioned once: Maybe they do not know the answer 100 per cent, but pass them; the kids need to do work placements; if outcomes are theoretical deliver them as if practical; depends on resources and my enthusiasm; we tend to emphasise areas we know well; often not follow exact syllabus order; implement things feel should be done; do what apprentices need, maybe not in the syllabus; national syllabus but what we do here may differ; may not follow syllabus entirely.

Total teachers = 48

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Table 3.9.17 below gives teachers assessment of CBT and shows that 59 per cent of teachers approve of it.

Table 3.9.17: What is your opinion of CBT assessment? (Q22)

OPINION OF CBT	Number	%
Approve of CBT	28	59
Qualified approval of CBT	2	4
Not approve CBT	4	8
Missing	14	29
Total	**48**	**100**

Teachers found that CBT affected their role in a number of ways. It allowed the identification of student strengths and weaknesses (8%) but was not resourced so that it ran effectively (6%). CBT did not affect the teacher role (6%) (table 3.9.18).

Table 3.9.18: Teachers' views of how CBT affects their teaching (TQ20, multiple response)

HOW CBT AFFECTS TEACHING	No.	%
Allows identify kids strength/weakness	4	8
Not affect role	3	6
Not resourced to run it effectively	3	6

Mentioned twice: Increases workload/marking; working with student to do practical exercises; increased the workload; some students think they do not need to try; we have had to get more equipment in; deciding objectively a little tricky; more time spent with w. tching assessment; substantiate what going to happen; look more at task completion.

Mentioned once: Changed the way that tasks are approached; need to keep all student work until all have completed; feel better not having to rank students; student relying on competency can be working below potential; more manageable than normative assessment; have to give student time to reach competency; makes more difficult deciding if competent; not much, just changed the way assess; not able to fully implement it; it doubles your work, is more expensive; have to give marks for industry study; still have to rate student for school; job is harder but more rewarding; use as the base of my teaching; we still put percentages on; got to make sure the student can do it; frees you up to look student differently; can focus on whether they understand; opportunity to present practical experiments; more accountable; concern about retention of information; have to be more of a facilitator; electronics needs a written assessment; in the credit transfers, document more; look at some skills in more detail; my teaching lends itself to CBA; in automotive difficult do all competencies; you feel more a marker than imparter; do not like it; we tend to be too teacher-directed; break each task into small tasks; only to extent of trying to motivate student; have to work a lot harder in classroom; not like way it affects the student more; need explain assessment requirements; stab in the dark in terms industry standards; had different interpretations.

Total teachers = 48

The positive benefits of CBT for students were: raising students self-esteem from achieving competency (10%); the students are more confident (8%); better for under-achievers (8%); it is better, harder, more relevant, effective (6%); students have to demonstrate that they can achieve competency which is good (6%); the student does not fail, try until they can pass (6%) (table 3.9.19).

Table 3.9.19: Does CBT have positive benefits for student? (TQ21, multiple response)

CBT BENEFITS FOR STUDENT	No.	%
Self-esteem from achieving competency	5	10
The students are more confident	4	8
Better for under-achievers	4	8
Better, harder, more relevant, effective	3	6
Demonstrate achieve competency, which is good	3	6
The student does not fail, try until they can pass	3	6
Faster ones not bored, can move along	3	6

Mentioned twice were: Reservations about time, facilities; very positive approach; more you do, more you learn; shows them what they can do; no benefits in only saying pass or fail; can see have achieved certain standard; more ready to go into workforce; lack of grading has problems for motivation; gives indication abilities for employers;

Mentioned once: They like it; in real world, everything is competence; it's fine if testing at right level; they recognise they have ability to learn; they go own pace, achieve something; cannot ask employers to teach the student; the student learns better; benefits student and workforce; they know where they are going; makes school to work relevant; not better for those who strive; they are more open to learning; it is a help to your teaching; has its benefits for certain subjects; old assessment sometimes not understand but pass; more relaxed they feel less pressure; student more focussed; less able can try for competency; there is immediate feedback for student; slower student more choices within module; not used to it, hard to explain it; had to rely on kids being able be assessed in workplace; better ones go down to others' standard; it's got to have benefits; demoralising if never going be competent; they need to see where they failed.

Total teachers = 48

SUMMARY

Section 3.9: What determines the strategies being used by teachers?

Teachers varied what has worked before (13%) and find students' needs and adapt to them (13%). Other determinants of teaching strategies mentioned by eight per cent of teachers were: the syllabus requirements and competencies; the topic and whether to break it up or not; the ability of the student and prior knowledge; and the fact that students learn differently and different teaching methods are needed. Other factors mentioned by four per cent of teachers were: to explain course, get feel of their level; go through it step by step; hands-on is really important to kids; mainly learning styles of the student; the module itself; respond best to workplace learning; and (use) what makes them learn not regurgitate (table 3.9.1).

One-quarter of teachers regard the best way to teach vocational content is by practical means (the more practical the better); to relate teaching to what the students know already (10%) and to integrate theory and practical (10%). Using different ways of doing things was mentioned by six per cent of teachers. Other factors mentioned by four per cent of teachers were: find out what they have done at school; adopt a light-hearted approach, non-threatening; be basic, simplify everything; you demonstrate then they do it; base teaching on career they aim for; summarise content, main objectives; get kids out into a real life situation; and (use a) student-centred to teacher-centred approach (table 3.9.2).

Most teachers (75%) have changed their vocational teaching approach in recent years but 15 per cent had not done so (table 3.9.3). The changes were as follows: 21 per cent have noted the need to be more practical but to teach theory too; 12 per cent of teachers now regard themselves as a facilitator; eight per cent note that their approach is different as a result of the introduction of competency-based training and assessment; and eight per cent note that their teaching is now a lot less structured and more flexible. Other factors mentioned by two per cent of teachers were: practical demonstration; made it as practical as possible; some JSSTAFE had to be taught like high school students; some JSSTAFE students a bit wayward as they had not yet made a decision on a career; if student not follow have to go back; be flexible, casual, build self-esteem; and one-on-one (teaching) is best (table 3.9.4).

Teachers' best teaching experiences include pride when a student is successful, gains work experience, and learns; their pride in being able to work as a teacher and seeing non-mainstream students successful. Teachers' worst experiences were to do with discrimination occurring within the student group; their inability to achieve certain goals due to lack of resources and difficulty in motivating lower ability students (tables 3.9.5–3.9.7).

Forty-six per cent of teachers said staff were involved in making course decisions (table 3.9.8).

Problems with course design reported by teachers were: lack of information on what to achieve in the course, the theory relating to OH & S; difficulty in devising activities to meet learning outcomes and lack of time or physical resources, facilities or tools (table 3.9.9).

About half of the teachers had difficulties with how the syllabus was delivered and described the difficulties as being that many assessments are not practical; difficulty with time and free periods; and the need to make work experience longer (table 3.9.11).

Teachers were asked if the equipment was sufficient for the course. Slightly more than half of the teachers said the equipment was not sufficient (table 3.9.13). The resources which teachers wanted included equipment, space, resources/materials, new equipment, more computer access and more support with equipment (table 3.9.14).

Half of the teachers interviewed said their teaching varied from the syllabus as follows: expand it...get the student to look further (15%); modify your tactics to get learning outcomes (4%); and know that students with special needs often have language problems (4%) (tables 3.9.15–16).

Competency-based training was approved of by 58 per cent of teachers. Teachers said CBT affected their role in a number of ways. It allowed the identification of student strengths and weaknesses (8%) but they were not resourced to run it effectively (6%). CBT did not affect the teacher role (6%) (tables 3.9.17–18).

3.10 What influence does the workplace have on teaching and learning?

Table 3.8.1 above showed that six per cent of teachers said that students' learning is improved by relating the topic to the workplace and by exposing students to industry (4% of teachers). Table 3.10.1 shows that 51 per cent of students were currently in paid employment.

Table 3.10.1: Currently in paid employment? (SQ23a)

PAID EMPLOYMENT	Number	%
Yes	58	51
No	42	37
Missing	13	12
Total	**113**	**100**

Table 3.10.2 below shows that the main work which students were doing was general work (21%), retail (16%) and food (12%).

Table 3.10.2: What work are you doing? (SQ23b)

STUDENT WORK	No.	%
Other work (general)	24	21
Retail	18	16
Other work (food)	14	12
Apprentice/work in trade	1	1
Missing	56	50
Total	**113**	**100**

Table 3.10.3 below shows that 25 per cent of students said the course was assisting them in the workplace. Nineteen per cent of students said the course was not assisting them in the workplace and further examination of this percentage showed that ten per cent were from secondary schools but it is not known what percentage of these were doing part-time work which was unrelated to school work.

Table 3.10.3: Students' views of whether course is assisting them in the workplace(SQ24a)

COURSE ASSISTED IN WORKPLACE	Number	%
Yes	29	25
No	21	19
Yes & No	3	3
Missing	60	53
Total	**113**	**100**

Ways in which the course was assisting students in the workplace were: with specific skills (12% and general skills and approaches (6%) (table 3.10.4).

Table 3.10.4: Students' views of how the course is assisting them in the workplace (SQ24b, multiple response)

HOW COURSE ASSISTING	No.	%	Missing
With specific skills	13	12	100
With general skills/ approaches	7	6	107

Total students = 113

Table 3.10.5 below shows that 73 per cent students said the course required them to undertake work placements.

Table 3.10.5: Required to do work placements? (SQ25)

REQUIRED TO DO WORK PLACEMENTS	Number	%
Yes	83	73
No	22	19
Missing	8	7
Total	**113**	**100**

Table 3.10.6 below shows that 49 per cent of students had done work placements.

Table 3.10.6: Done work placement? (SQ26A)

DONE WORK PLACEMENT	Number	%
Yes	55	49
No	26	23
Missing	32	28
Total	**113**	**100**

Table 3.10.7 gives students' comments about their workplace experience as follows: workplace was a lot more hands-on (11%); you are out in the real world (5%); you are doing it rather than just talking about it (4%); you are under more pressure (4%); and you get more responsibility and variety (3% each).

Table 3.10.7: How did work placement differ from class? (SQ26b, multiple response)

WORKPLACE DIFFER FROM CLASS	No.	%	Missing
Workplace was a lot more hands-on	12	11	101
You are out in the real world	6	5	107
Doing it, instead of just talking about it	5	4	108
More under pressure—it's real	4	4	101
You get more responsibility	3	3	110
There is more variety	3	3	110
You meet people	3	3	110
Schools do more writing	3	3	110
Communicate with more people	3	3	110
More practical, get to use what you learn	3	3	110

Mentioned twice: Not working in team environment; TAFE just shows you, actually do it in work placement; at TAFE teachers have bit more time to answer questions; learn from your mistakes; much more interactive; not just sitting note taking, listening; more active, not sitting at desk, or reading; it's easier.

Mentioned once: you can't bludge, more expected of you; in workplace get tips and shortcuts; you have responsibility to finish the job; at work taught on job, at TAFE taught before do job; at school not face to face with problems; you had to finish the job properly; get more personal attention; it's purposeful, doing it for a reason; becomes meaningful when put into practice; at school you have pretend situations; real people, customers, atmosphere; it's more fun; more relaxed; not everyone wants to help you in workplace; you have to do your best and actually work on it; TAFE better prepares you for workplace; had to work harder; learn more from hands on.

Total students = 113

Table 3.10.8 below shows that students perceived the workplace as a place which would have more pressure, be busier, more challenging and more difficult (5%); and a place where you were responsible to finish the job (4%).

Table 3.10.8: Students' views of differences between workplace and school (SQ26c, multiple response)

STUDENTS' VIEWS OF WORKPLACE	No.	%	Missing
Be more pressure/busier, more challenging/difficult	6	5	107
You are responsible to finish job; in workplace they less patient	4	4	109
You would have the full hands on experience	2	2	112

Mentioned once: have to put it into practice; you won't know anyone at all; there's no one really to sit there to show you how to do it; it's real life, you're not pretending; learning at TAFE better than in workplace; will be all machinery, no hand tools;

Total students = 113

Table 3.10.9 below gives students' comments on learning in the workplace. The main form of learning was explaining or showing, accompanied by watching that the work was done correctly (16%).

Table 3.10.9: Students' comments on how people in workplace teach (SQ27, multiple response)

HOW PEOPLE IN WORKPLACE TEACH	No.	%	Missing
Explaining, showing, watching me, do it right	18	16	95
Mainly by example	10	9	103
Step-by-step techniques	4	4	109
They explain to you what goes on in daily routine	4	4	109
Lot more hands on	3	3	110
They make sure you understand it	3	3	110
If need help can get it	3	3	110

Mentioned twice: we work as team; they go through the steps; they have the experience to teach you the right way; if I did something wrong, they showed the correct way; they show me until I'm confident, then let me do it; explain how things work and what I have to do; they speak to you like you're an actual employee.

Mentioned once: They gave me their training modules; it's all practical; there's not much explaining, just get thrown into it; get taught how to relate to people; you learn from your mistakes, trial and error; trained me on everything; told me what to do and I did it; they're patient; asked what I'd done, and knew, then they explained it; work with different people each week.

Total students = 113

Table 3.10.10 shows that work placements gave students benefits including: more confidence and self-esteem (18%); vocational skills (9%); learning how to treat customers (9%); and relate to people (6%) (see also table 3.10.12 which summarises the data into three main themes).

Table 3.10.10: What did you gain as result of work placement? (Q28)

GAINS DUE TO WORK PLACEMENT	No.	%	Missing
More confidence, self-esteem doing the work	20	18	93
Vocational skills	10	9	103
Learning how to treat customers	10	9	103
Learning how to relate to people	7	6	106
Meeting new people	6	5	107
Communication skills are a lot better	6	5	107
More experience in the trade	4	4	109
A lot more experience with hands	4	4	109
Knowing what it's like on the job site	3	3	110
Working with other people	3	3	110
Respect from the people I worked with	3	3	110

Mentioned twice: Independence, ability to think for yourself; more outgoing; a work ethic; knowledge about the work; serving customers; feel like a real worker; a job; making more friends; new knowledge.

Mentioned once: how to save your money and how to spend it; observing different ways of professionals; doing different things; getting stronger, lot faster at work; learned you need product knowledge; I know what I want to do now, for work; nothing new; how to relate what learnt to their work; greater variety of work; learn and use lots of machines; making cappuccinos; using computers, fax, telephones; gained insights on how difficult is the workforce; fill out forms, service books, get cheap parts.

Total students =113

Table 3.10.11 summarises the gains for students from work placements and shows that students: acquire people skills (35%); vocational skills (32%) and confidence and self-esteem (27%).

Table 3.10.11: What students gain as result of work placement (Q28, multiple response, summary of data into main themes)

MAIN GAINS FROM WORK PLACEMENT	No.	%
Acquiring people skills	40	35
Acquiring vocational skills	36	32
More confidence, self-esteem doing the work	31	27

Total students = 113

Teachers' views of the main differences between learning in the workplace and learning in TAFE or in school is given in table 3.10.12 below.

Table 3.10.12: Teachers' views of the main differences between learning in the workplace and learning in TAFE or school (TQ23, multiple response)

DIFFERENCES SEEN BY TEACHERS	No.	%
In the workplace it's practical	11	23
Get theory in school, practical in workplace	8	17
In workplace see things in real life	5	10
In the workplace more stress, pressure	5	10
In workplace learn what's specific to that workplace	5	10
They get OH&S information at college	4	8
Use workplace only as enhancement	4	8
In classroom teach spectrum of industry	3	6

Mentioned twice: conflict between classroom and workplace re teaching; job is reinforced by TAFE teaching; at TAFE got to be realistic to workplace; some students do not learn as much in workplace; in workplace there is no room for mistakes; workplace provides motivation; there are problems controlling workplace learning quality; some cases, workplace is not structured learning;

Mentioned once: should not ask builder to assess student competency; difficult to tell employers this is to supplement learning; do things differently in the workplace; in workplace students learn social skills; in workplace students find more independence; workplace best learn social/work skills; workplace learning puts perspective; classroom learning more structured; to have employer involved in assessment workplace learning can be difficult; classroom is great for learning social skills; many employers teach wrong way; TAFE learning is more thorough; workplace needs trained person; in the workplace they see impact on them; some TAFE students not see benefit; workplace training necessary for confidence; TAFE tries give necessary skills to student; in workplace many bosses/teachers; in workplace there is pressure to conform to a style; in TAFE can ensure learning outcomes; ideas of competency vary in workplaces; they need show initiative in workplace; can match theory to practice in workplace; school can give more opportunity to get skill; TAFE has (wide) skill of lecturers; less time constraint in classroom; student–lecturer relationship different to boss–employee; in the workplace are producing something; have less time in workplace.

Total students = 113

SUMMARY

Section 3.10: What influence does the workplace have on teaching and learning?

Half of the students (51%) were currently in paid employment (table 3.10.1) and the main work was general work (21%), retail (16%) and food (12%) (table 3.10.2).

One-quarter of students said the course was assisting them in the workplace (table 3.10.3). Nineteen per cent of students said that the course was not assisting them in the workplace, of these ten per cent were school students. It is not known if the part-time work of these students was related to their course/subject

Ways in which the course was assisting students in the workplace were: with specific skills (12%) and general skills and approaches (6%) (table 3.10.4).

Students (73%) said the course required them to work placements (table 3.10.5) and 49 per cent of students had done work placements (table 3.10.6).

Students commented on their workplace experience as follows: workplace was a lot more hands-on (11%); you are out in the real world (5%); you are doing it rather than just talking about it (4%); you are under more pressure (4%); and you get more responsibility and variety (3% each) (table 3.10.7).

Some students (5%) perceived the workplace as a place which would have more pressure, be busier, more challenging and more difficult, and some perceived the workplace as making them responsible to finish the job (4%) (table 3.10.8).

Students commented on learning in the workplace noting that the main form of learning was explaining or showing accompanied by watching that the work was done right (16%) (table 3.10.9).

Work placements gave students benefits including: more confidence and self-esteem (18%); vocational skills (9%); learning how to treat customers (9%); and relate to people (6%) (table 3.10.10). See also table 3.10.11 which summarises the data into three main themes: acquire people skills (35%); vocational skills (32%) and confidence and self-esteem (27%).

4. Summary and discussion

4.1 Research design

The study covered students engaged in initial vocational education in senior secondary schools (Years 11–12) and TAFE. The study examined students' learning preferences, reasons for doing a vocational course/subject and their view of initial vocational education, including that of teachers, resources and associated workplace learning. The study also examined current teaching practices as evident in teacher–student classroom interaction and teachers' approaches to teaching vocational students.

The research design called for observation of teaching and learning episodes in classrooms where initial VET courses/subjects were taught. Subsequently, separate interviews with a number of students from the class and the teacher were undertaken. The research sites included senior secondary schools and TAFE, covered New South Wales, Victoria and South Australia and were chosen to reflect low, low-rural, and medium socio-economic status (SES) groupings.

4.2 Response

The data for the study comprised interviews with 113 initial vocational education students in TAFE (52 students) and secondary schools (61 students); interviews with 48 teachers; and observations of teaching and learning episodes in 37 of the 48 delivery sites chosen for the study. The 48 delivery sites were in three Australian States: NSW (16 TAFE, 15 school sites), Victoria (5 TAFE, 4 school sites) and South Australia (4 TAFE, 4 school sites). The majority of delivery sites, 65 per cent, were in localities characterised by low, or low-rural, SES. The remaining delivery sites (30%) were in medium SES localities.

There were slightly more male than female students in the study. The majority of students (72%) were aged 16–17 years, nine per cent of identified as Aboriginal or Torres Straight Islander; 34 per cent received financial assistance; 12 per cent did not speak English as a first language and six per cent considered they had a learning disability. Thirty-two per cent of courses/subjects included in the study had one or more students with non-English-speaking-background. Most NSW students (93%) were studying or had studied for the NSW Higher School Certificate (HSC) and were undertaking 10–12 subjects (73%). Students were undertaking either English – general (38%) or English – contemporary (34%). Students were undertaking mathematics in society (45%) or 2U mathematics (19%) and 34 per cent were able to undertake the English and mathematics subjects as their first choice. Only three per cent of students reported timetabling restrictions as forcing a choice between vocational and general subjects. Only eight per cent of students had dropped a subject since starting Year 11.

Of the 48 teachers interviewed for the study, 25 were in TAFE and 23 were in secondary schools. They were qualified at degree or higher (19%) or had a diploma or TAFE qualification (19%). Most teachers (80%) had taught for over five years. Their reasons for becoming a vocational teacher were that they had wanted to be a vocational teacher (40%), had wanted to help students or had seen the need for vocational courses (23%), had wanted the rewards (15%) or had been told to do it (8%).

The topics/tasks covered in the observations of teaching and learning episodes in 37 of the 48 research sites were spread across the main areas which were the focus of the study, namely:

- building and construction; metals and engineering; electronics; furnishing; automotive and design and technology (42 teacher interviews; 11 observations of teaching and learning).
- hospitality; tourism (23 teacher interviews; 7 observations).
- retail; office accounting (34 teacher interviews; 10 observations).
- child care; rural (14 teacher interviews; 5 observations).

Note: In the summary above, data were missing from four sites.

Most students interviewed were in office skills (22%) and hospitality/tourism (20%), followed by metals (11%), building (10%), and furniture (9%). The most frequently occurring course/subject groups in the observation of teaching and learning episodes were office skills, and hospitality and tourism (19% each) and building and construction (11%).

4.3 Students' opinions of their course and reasons for doing a VET course

Students were strong in their approval of their vocational courses/subjects with the majority (95%) saying that they liked their vocational course (table 3.3.1a). In NSW slightly more school students (55%) than TAFE students (45%) liked their vocational course/subject. In Victoria 50 per cent of school students liked their course compared with 46 per cent of TAFE students. In South Australia 62 per cent of school students liked their vocational course/subject, compared to 38 per cent of TAFE students. There were other data which showed the preference of NSW school students for their vocational course/subject. More school students (37%) than TAFE students (10%) gave their course/subject a rating of 'very satisfactory' (table 3.3.3). The majority of students (68%) said they would choose the vocational course again if they had the opportunity (table 3.3.7). When considering differences between the TAFE and secondary school data it should be borne in mind that the two environments are different and the expectations of teachers and students are different. For example, there is reason to believe that some secondary school students may undertake vocational courses for reasons other than career interest; that is, for personal interest in the topic and/or to gain skills they see as useful. TAFE students, where the course is linked to their work, have the advantage of access to mentors at their workplace, and so on. Furthermore, the question of possible differences in levels of resources between TAFE and schools should be kept in mind when making comparisons between the two environments.

Students were asked to rate their course/subject using rating choices (very satisfactory, satisfactory, borderline, unsatisfactory and very unsatisfactory). NSW students (48%) rated their course either 'very satisfactory' or 'satisfactory' (54% missing data). Victorian students (100%) rated their vocational course as 'very satisfactory' or 'satisfactory'. South Australian students (94%) rated their vocational course as 'very satisfactory' or 'satisfactory'.

Examination of differences between TAFE and secondary school students' rating of their course revealed that more school students than TAFE students rated their course/subject as 'very satisfactory'. However, school students and TAFE students were similar in their rating of the course as 'satisfactory' (table 3.3.3). Examination of differences between females and males in their rating of the course/subject revealed only small differences due to gender (table 3.3.4): 33 per cent of females and 41 per cent of males rated their vocational course as 'very satisfactory' or 'satisfactory'.

The reasons why students do a vocational course are: the subject is interesting or enjoyable 40 per cent (TAFE 15%, school 25%); to get a specific job or that they already had a job in that area 34 per cent (TAFE 15%, school 19%); and to get qualifications or skills or experience 25 per cent (TAFE 13%, school 12%) (table 3.3.7). Females rather than males preferred to do the vocational course as an investment for the future and to get/have a specific job (table 3.3.9). A comparison of students' reasons for doing their vocational course and the socio economic status of the provider location (table 3.3.8) showed no difference in results.

Students' reasons for liking the vocational course included: the gaining of work skills (32%), the practical side of the course or subject (24%) and the good classroom atmosphere (20%). Other reasons for liking the course/subject were that it leads to job opportunities (13%) and the variety of the course/subject (11%). The theory side (2%) did not score highly as a reason for liking the course (table 3.3.6).

Most students (92%) believed the vocational course would help in further study or job (table 3.3.10) and gave as reasons (table 3.3.11) that the qualification is important (22%) and the experience gained is important (14%).

Most students (72%) knew what they wanted to do after finishing the course and a further 13 per cent had some idea what they wanted to do (table 3.3.12). Students' plans following the course were to get another qualification or go to university (41%); or get work, other than an apprenticeship (35%); or get or finish an apprenticeship (13%) (table 3.3.13).

When asked if they would choose the vocational course again if they had the opportunity, a total of 68 per cent all students interviewed would choose the same vocational course or subject again. The State totals were: NSW 67 per cent, Victoria 79 per cent, and SA 56 per cent (table 3.3.5).

4.4 Initial VET students' comments about how they learn

To understand students' preferred ways of learning they were asked if they prefer to work with their head, their hands or both head and hands. Most students (67%) preferred to work with both head and hands, but a sizeable group, 28 per cent preferred to work mainly with their hands (table 3.4.1). Not shown in the table is that 19 per cent of those who preferred to work with their hands were school students.

Students' learning preferences were further examined by asking for their best and worst experiences in the course/subject. Students' best experiences were getting job-related skills (36%); getting good results (9%) and personal satisfaction and reward (6%) (table 3.4.2a). Their worst experience in the course was the assessment (13%); followed by boring classes (8%); not doing well enough; too much work; the theory; missing a test; the work experience; the teacher or the teaching; the timetable; or the travel time (7% each) (table 3.4.2b).

To gauge the difficulty of the course/subjects students were asked what parts of the course were hard to learn and easy to learn. The parts of the course which students said were hard to learn included individual subjects (21%) and a lot to remember (10%). Five per cent of students said the theory was hard to learn. Mathematics or theory were not rated as easy to learn (2% and 1% respectively). The course was 'easy or OK' for 30 per cent of students. The practical skills component of the course was easy to learn for 40 per cent of students (table 3.4.4).

4.5 What interpretations do students place on specific learning activities?

Course hand-outs provided to students covered: description of course content (65% of replies); theory (9%); assessment (7%); and course information (3%) (table 3.5.1). Most students (82%) said hand-outs helped them to learn (table 3.5.2). Other teaching aids used were: videotape (69%), computer simulation (18%), slides (4%), audiotape (4%), and working models (13%) (table 3.5.3).

Fifteen per cent of students wanted more or better equipment, and seven per cent wanted more or better materials (table 3.5.5).

A sizeable percentage of students (38%) did not use a library (table 3.5.6). However, this finding needs to be balanced against the large number of students (82%) who reported that hand-outs helped them to learn (table 3.5.2). It may be that the hand-outs provided sufficient information for students' needs. For the 51 per cent of students who used a library, most used a TAFE library (29%), a school library (25%) and/or a public library (19%) (table 3.5.7).

Half of the students reported they had nothing to dislike about assessment (50%) but for nine per cent of students there was too much work and too little time, and for eight per cent of students the written work was what they disliked about assessment (table 3.5.8). In response the question about what students liked about assessment: 38 per cent of students said the assessment was good; there was good teaching and the course was good (18%); the course was not hard/good pace (12%); and the practical work was liked by seven per cent of students (table 3.5.9).

4.6 What are the significant features of the learning environments in which students experience initial vocational education?

The introduction of CBT is a significant feature of the learning environment of initial vocational education. The main patterns of forms of teaching, based on the observation of 37 classes, was that that mixed forms of teaching were used. The use of mixed forms of teaching in initial vocational education contexts supports the findings of Misko (1994) and Crump et al. (1997) in relation to student preferences for step-by-step, concrete-experience learning methods.

The observed teaching and learning episodes were mainly practical (46%), lecture (43%), demonstration (22%), and group work or individual self-paced learning (19% each) (table 3.2.17).

During the observation of teaching and learning episodes most students appeared interested in the topic (62%). Students were observed to participate in the learning process (49%); be focussed on the learning activity (46%); and be attentive to the teacher (30%). They talked to each other about the work (24%) and asked questions or were quiet (16%) (table 3.6.2). The interest of students in the topic and the evidence of their engagement in the learning process seems to reflect some of the elements of effective learning in CBT programs identified by Harris et al. (1995) such as development of self-directing learning skills and learning how to relate to educators and, as the data show, developing skills in relating to each other on work tasks.

The observation of gender interactions in the classroom showed the majority of teachers, 30 per cent, gave equal help to males and to females (note that some classes were single sex), and on only two occasions did males demand more attention than females (table 3.6.3). The presence of an observer in the classroom may have influenced the observed behaviour.

4.7 What are the main teaching strategies currently being used in initial vocational education?

The actions of teachers in the classroom, categorised by the observers, were mainly: to help students as required (32% of teachers); answer questions (24%); explain (16%); organise the students into groups; be organised; and question students to check understanding (14%). Eleven per cent of teachers: helped students when asked; involved students in teaching; related industry experiences; were knowledgeable about subject; showed were willing to help; used overhead transparencies; and helped individual students. Eight per cent of teachers were supportive of student effort; praised students; pulled students into line; needed to quieten a noisy student; used humour; and drew out student responses to summarise information (table 3.7.1).

Teachers' accounts of their actions during the lesson in the classroom reveal they were concerned to: keep theory short; use practical approaches; give students something they were interested in, let the student choose projects in a fairly free classroom atmosphere, set up activities with the student (CBT); approach students gently to gain their confidence; keep instruction basic and not provide a lot of instruction at once (table 3.7.2).

The classroom observers classified teaching styles as: approachable (76%); informal (68%); non-authoritarian (54%); teacher-directed (51%); student-centred (35%) friendly (27%), reserved (27%) and mainly formal (22%) (table 3.7.3).

When the observers' classification of styles of teaching were compared with students' rating of the course ('very satisfactory', 'satisfactory') it was found that students gave higher ratings of the course as 'very satisfactory' or 'satisfactory' for teaching styles classified as approachable, informal or non-authoritarian, than the 'authoritarian' teaching style. However, the numbers of respondents (5) was small with regard to the classification 'authoritarian' (table 3.7.3). (No students rated the course as 'borderline', 'unsatisfactory' or 'very unsatisfactory'.)

The interactions between teachers and students in the 37 observed teaching and learning episodes were focussed on the task (62%); reflected a master–novice relationship; showed the teacher relating to students (59%); and were characterised by the observers as 'bi-directional' (41%) meaning that the teachers' attitudes and strategies shaped the students' behaviour and that the students' attitudes and strategies shaped the teachers behaviour (table 3.7.4).

Where the teaching style was classified by the observers as bi-directional, master–novice or practical, and then compared with students' ratings of the course, the ratings were at the high levels of 'very satisfactory' or 'satisfactory'.

The observers classified classroom atmosphere or climate as formal (27%) or relaxed (14%) (table 3.7.7).

In 19 per cent of the classroom observations it was observed that theory was covered then applied; for 16 per cent of the classroom observations student learning was by practical means, and for eight per cent of the observations learning by hands-on methods appeared to be a successful way for students to learn (table 3.7.8).

Students liked teachers who were able to relate to them as an equal and to be friendly (29%); be knowledgeable and have industry experience (27%); have good communication skills; be fair,

patient, tolerant and accepting (18%); be able to involve students and make sure they understand; be understanding and caring; and treat students with respect and as adults. Other qualities included being able to take control of the class (8%), being organised (6%), being able to teach properly (4%), being motivated (2%) and using demonstration (1%) (table 3.7.9).

In contrast to the qualities of the good teacher, students perceived the 'not good' teacher as: not emotionally supportive (18%); unclear or gave no explanations (17%); not prepared or organised; (5%); not treating students equally (3%); not making learning interesting (3%); lacking a sense of humour (2%); and lacking impartiality (2%) (table 3.7.10).

Most students (65%) thought that the teacher did something different from other teachers to make the course interesting. Note the 'other teachers' would, in all probability, have been teachers of general subjects which the students undertake (table 3.7.11). Learning was made easier, according to students, when: the teacher explains clearly (14%); uses humour, is easy to get on with and relaxed (14%); varies the learning (14%); treats us like adults (9%); and uses group activities and discussions (9%) (table 3.7.12).

More than half of the students (57%) said that the teacher makes learning easier or better for them (table 3.7.13). Methods used by teachers, according to students, were: explain, demonstrate and show shortcuts (28%); be approachable, helpful and easy to get on with (12%); be good teachers who know their subject (7%); and use variety in teaching (6%) (table 3.7.14). Twice as many school students (66%) as TAFE students (35%) believed the teacher understands how they learn.

Half of the students (52%) believe that the teacher understands how they learn (table 3.7.15). This was conveyed by: teachers being seen to understand student needs (18%); being a good teacher (12%); giving individual help (4%); and getting students to take charge of their learning (table 3.7.16).

Forty per cent of teachers perceived differences in vocational students compared to general students (table 3.7.17). The main differences were: the course was practical (17%); the students had less maturity, experience and motivation (13%); it was necessary to be more student-centred and less teacher-directed (13%). The student differences were similar to that reported by Crump et al. (1997) in relation to differences in maturity, experience and motivation.

With reference to content-endorsed courses, Gonczi (1997) warned of the danger of teaching which may be 'disjointed' by not providing experiences which bring together the various sub-components. This points to the importance of providing initial vocational education teachers with background material to inform understanding of teaching methods and practices in classrooms, work placement and experience as part of the school curriculum. He also identified potential problems with the way the work placement is conceived in content-endorsed courses: whether it is seen as 'enhancement' or as a core learning experience. According to Gonczi (1997), documentation of how the course/subject conceptually links to the school-based section of the course is important.

TAFE teachers in NSW, used to teaching adults, noted that some JSSTAFE students have less maturity. Other factors mentioned by teachers (2%) were: that general students have greater control over their learning; there is a need to be alert to the problems of vocational students; that CBT outcomes are more precise; teaching needs to be hands-on; vocational students are less motivated and are less academic (table 3.7.18).

The research outlined above suggests strongly that there is a need to expand teachers' understanding of the situated nature of learning and how the work placements might be used more effectively to develop student learning than they are currently. It is also important to monitor employer assessment of student achievement in competencies. This may be difficult since teachers reported organisational problems concerning visiting students in the workplace.

The increasing training and qualifications noted by Turney et al. (1993) were reflected in the data from the present study. For vocational teachers it is particularly important that they possess work experience related to the vocation they are teaching and have appropriate professional affiliations in order to keep up to date with work in the vocation. The study has shown that among the qualities of teachers which students admire is relevant industry experience.

4.8 What assumptions do teachers make about how students learn?

The majority of teachers (52%) believe that vocational students learn best by hands-on learning. Fifteen per cent of teachers said a variety of teaching styles helps students to learn, six per cent of teachers said that learning depends on student maturity and that it is necessary to relate the topic to the workplace. Other comments included: use of demonstration and practice (4%); teaching the fundamentals (4%); relating teaching to everyday life (4%); exposing students to industry (4%); and use of reinforcement and repetition (table 3.8.1).

Student motivation was rated by teachers as follows: high (40%), medium (25%) and low (8%). However, 20 per cent of teachers said that student motivation covers the whole range (low to high) (table 3.8.2).

Teachers cater for students with learning difficulties by simplifying teaching into step-by-step procedures (23%), providing individual attention and making sure that students understand (19%), and giving demonstration and explanation, especially if there are language difficulties (16%). Teachers noted that students learn from peers (12%), that they should be available outside teaching hours to give help (12%) and be flexible and use self-paced learning (8%). Other factors mentioned by four per cent of teachers were to use different strategies in relation to giving explanations, to offer tutorials, to get students to solve their own problems, use role-play, analyse the group needs, and always ask if students have a problem (table 3.8.4).

4.9 What determines the strategies being used by teachers?

Strategies used by teachers included varying what has worked before (13%) and finding students' needs and adapt to them (13%). Other determinants of teaching strategies mentioned by eight per cent of teachers were: the syllabus requirements and competencies; the topic and whether to break it up or not; the ability of the student and prior knowledge; and the fact that students learn differently and different teaching methods are needed. Other factors mentioned by four per cent of teachers were: to explain the course and identify students' level; go through it step by step; hands-on is really important to kids; mainly learning styles of the student; the module itself; respond best to workplace learning; and (use) what makes them learn not regurgitate (table 3.9.1).

Twenty-five per cent of teachers believe that the best way to teach vocational content is by practical means (the more practical the better). Ten per cent of teachers believe it is important to relate teaching to what the students know already (10%) and to integrate theory and practical (10%). Using different ways of doing things was mentioned by six per cent of teachers. Other factors mentioned

by four per cent of teachers were: find out what they have done at school; adopt a light-hearted approach, non-threatening; be basic, simplify everything; demonstrate then they do it; base teaching on career they aim for; summarise content, main objectives; get kids out into a real life situation; and (use a) student-centred not teacher-centred approach (table 3.9.2).

Most teachers (75%) have changed their vocational teaching approach in recent years but of some concern is that 15 per cent had not changed their way of teaching (table 3.9.3). The changes were as follows: 21 per cent have noted the need to be more practical but to teach theory as well; 12 per cent of teachers now regard themselves as a facilitator; eight per cent note that their approach is different due to the introduction of competency-based training and assessment; and eight per cent note that their teaching is now a lot less structured and more flexible. Other factors mentioned by two per cent of teachers were: practical demonstration; made it as practical as possible; had to teach some JSSTAFE students like high school students; some JSSTAFE students were a bit wayward as they had not yet made career decision; if students do not follow (the lesson) you have to go back over it; be flexible, casual, build self-esteem; and the best teaching is one on one (table 3.9.4).

To explore whether the rewards of teaching were a possible influence on teaching strategies, teachers were asked about their best teaching experiences. The replies included: pride when a student was successful or benefits from work experience; and pride in being able to work as a teacher and seeing non-mainstream students become successful. The contrasting question about teachers' worst teaching experiences revealed some of the difficult aspects of the job. These included dealing with discrimination occurring within the student group; inability to achieve certain goals due to lack of resources; and difficulty in motivating lower ability students (tables 3.9.5–3.9.7).

Forty-six per cent of teachers said staff were involved in making course decisions (table 3.9.8).

Problems with course design reported by teachers were: lack of information on the desired outcomes of the course, the theory on OH&`S; difficulty in devising activities to meet learning outcomes and lack of time or physical resources, facilities or tools (table 3.9.9).

About half of the teachers had difficulties with how the syllabus was delivered and described the difficulties as being that many assessments are not practical; difficulty with time and free periods; and the need to make work placements longer (table 3.3.11).

Teachers were asked if the equipment was sufficient for the course. Slightly more than half of the teachers said the equipment was not sufficient (table 3.9.14). The resources which teachers wanted included equipment, space, resources/materials, more equipment or new equipment, increased computer access and more support with equipment (table 3.9.16).

Half of the teachers interviewed said their teaching varied from the syllabus (table 3.9.17) as follows: expand it...get the student to look further (15%); modify your tactics get learning outcomes (4%); and know that students with special needs often have language problems (4%).

CBT was approved of by 58 per cent of teachers. Teachers found that CBT affected their role in a number of ways. It allowed the identification of student strengths and weaknesses (8%) but was not resourced to enable it to run effectively (6%). CBT did not affect the teacher role (6%) (table 3.9.20).

The data from the study support the views of Harris et al. (1995) who said that changes to teaching resulting from the implementation of CBT included a need for educators to develop skills in a variety of teaching methods; develop skills as a facilitator and resource person; develop proficiency in motivating learners, including respecting the autonomy of the learners. The data also support Gonczi's (1997) comment on the desirability of using self-pacing and student-centred, self-directed learning in relation to CBT.

Mayer (1992) noted that in a CBT framework competence is seen as underpinning and driving the curriculum. A promising area of research would be to examine the relationship between formal expressions of how CBT should be implemented and how CBT is actually implemented; that is, how CBT changes in the hands of teachers as they exercise judgement about individual achievement of competence in initial vocational education contexts which require accommodating student learning needs and preferences.

4.10 What influence does the workplace have on teaching and learning?

Most students (51%) were currently in paid employment (table 3.10.1) and the main work was general work (21%), retail (16%) and food (12%) (table 3.10.2). It is not known whether the paid employment was directly related to the vocational course/subject. This had been shown in American studies to lead to students performing better academically (Stern et al. 1997) whereas part-time work which is not connected to school was believed to detract from academic achievement at school. The relationship between academic achievement and paid employment in the Australian context would make a useful research study.

One-quarter of students said the course was assisting them in the workplace (table 3.10.3). Of the 19 per cent of students who said the course was not assisting them in the workplace, ten per cent were from secondary schools but it is not known what percentage of these were doing part-time work which was unrelated to school work.

Ways in which the course was assisting students in the workplace were: with specific skills (12%) and general skills and approaches (6%) (table 3.10.4).

Students (73%) said the course required them to do work placements (table 3.10.5) and 49 per cent of students had done work placements (table 3.10.6).

Students commented on their workplace experience as follows: workplace was a lot more hands-on (11%); you are out in the real world (5%); you are doing it rather than just talking about it (4%); you are under more pressure (4%); and you get more responsibility and variety (3% each) (table 3.10.7).

Some students (5%) perceived the workplace as a place which would have more pressure, be busier, more challenging and more difficult, and some perceived the workplace as making them responsible for finishing the job (4%) (table 3.10.8).

Students commented on learning in the workplace, noting that the main form of learning was explaining or showing, accompanied by watching that the work was done correctly (16%) (table 3.10.9).

Work placements gave students benefits including: more confidence and self-esteem (18%); vocational skills (9%); learning how to treat customers (9%); and relate to people (6%) (table

3.10.10). See also table 3.10.11 which summarises the data into three main themes: acquire people skills (35%); vocational skills (32%) and confidence and self-esteem (27%).

Since the research did not extend to the workplace it did not deal with the integration of work and institution-based learning, the importance of which was highlighted in the American research of Stern et al. (1997). The findings of the research point to the importance of the work placements in broadening students' horizons by giving them direct experience of aspects of the world of work and helping in the development of confidence and self-esteem. These are factors which should be included in research into the integration of work and institution-based learning.

The point made by Gonczi (1997, p.104) about work experience allowing an initiation into the world of practice is important especially in relation to the development of skills in working with others and in teams. This requires a focus on the integration of learning that occurs in the workplace in the fullest possible sense, considering the social and the intellectual aspects of the application of theory into practice.

McGaw (1996) referred to the need to develop curricula and teaching methods compatible with the competency-based standards framework. The study pointed to the possible existence of problems with the work placement programs. Teachers commented on the limitations for students in the provision of work placement sites and difficulties in providing excursions. This should be further investigated. There is also a need for research which examines student outcomes from initial vocational courses with particular reference to students' performance in employment related to their studies.

The perception of Turney et al. (1993, p.5) in relation to lower levels of participation and aspiration for further education in rural communities was reflected in the present study.

5. Conclusion

The study highlights the importance of the practical components of initial vocational education courses. As one teacher said:

> *You've really got to work from their hands to their brains not from their brains to their hands, you've got to work backwards. You have to do it practically ... its got to be 90 per cent hands on, maybe even more than 90 per cent, a lot of hands on ... its no good giving them a book and letting them read ...*

Evidence from the study in support of the value of practical teaching comes from a variety of sources. The majority of teachers, 52 per cent, believe that vocational students learn best by hands-on learning. The overwhelming majority of students, 95 per cent, liked their vocational course/subject, and 64 per cent would do a vocational course/subject again if they had the opportunity. The study provides evidence which explains this high level of approval. A large number of students prefer to work mainly with their hands and another, even larger group likes to work with both head and hands (these two groups accounted for 97% of students). Students saw the vocational courses/subjects as interesting and enjoyable; leading to jobs; providing work skills and qualifications; or as useful experience. Females wanted work-related skills and saw the vocational courses/subjects as a potential job opportunity for the future. The student group seemed clear about what they wanted to do when they finished their course/subject and were, according to teachers, either highly motivated (40%) or exhibited medium motivation (25%). The interest displayed by students in the classroom topics/tasks was confirmed by observation. Unfortunately, there was scant interest shown by students in the theory component of the courses/subjects and a lack of interest in library facilities which are used by only half of the students.

The findings in relation to the practical components of the courses/subjects highlights the special value of these components, in initial vocational learning contexts, of allowing the learner to experience the operation of theory in concrete (practical) application. This poses a particular challenge to instructional designers and to teachers in ensuring that the practical components of the courses/subjects are integrated with theory which is relevant to the acquisition of workplace competence.

Another important reason for students' preference for their vocational courses/subjects was that the teachers were approachable, friendly, understanding, and able to make learning interesting within an overall master–novice teaching relationship. Indeed students like teachers who are able to relate to them as an equal and to be friendly. These respectful styles of classroom interactions appear to fit well with the adult tone of vocational courses/subjects, a particularly relevant aspect considering that most students are in transition into adulthood. For initial VET it could be said that students expect to be in a master–novice relationship and that such a relationship works best when it is experienced as informal and non-authoritarian. When the teacher–student relationship lacks emotional support, teaching efficiency is probably diminished even if the teacher is otherwise competent. Vocational teachers appear to be skilled at forms of teaching appropriate to students with educational disadvantage; for example, breaking tasks into manageable units, being flexible in the classroom through the adoption of a variety of teaching styles, including being a facilitator of student-centred learning, as well as using demonstration, checking understanding and so on.

The further improvement of the practical components of initial vocational courses could draw on the research of Evans and Butler (1992a) in relation to the development of expert models of skilled action. They suggest that models which capture the processes entailed in expert performance in trade areas would be generally useful in the development of competency-based approaches to curriculum, teaching and assessment. The capture of the elements of a skilled manual performance from an expert can be useful, Evans and Butler (1992a) argue, in developing curriculum which embodies the following generic processes: self-monitoring and use of task-feedback by the learner and the nature of the teacher–student interaction in regard to the evaluation of student performance and the setting of goals for subsequent performance.

The research by Evans and Butler (1992a) indicates that the key to designing practical learning experiences for students in initial vocational education is to include carefully selected aspects of the skilled performance of experts—the underlying concepts and the associated manual skills—within the practical instruction episode. To assist the further development of teachers' skills in curriculum design of practical learning episodes there is a role for the use of research techniques in capturing and understanding expertise, and the development of teachers' skills in the incorporation of this expertise within practical learning in initial VET courses/subjects.

Imparting technical competence also requires teacher skill in handling the social processes of teaching. The study by Crump et al. (1997) of the learning preferences of initial vocational education students characterised by educational disadvantage pointed to the element of co-production involved in the student–teacher relationship, meaning that the teacher and the student jointly produce the student's learning outcomes. The processes involved are modelled in figure 2.1 and show the sophisticated skills underlying vocational teachers' work.

The practical components of courses/subjects need to continue to reflect the changing nature of work for which lifelong learning and team skills are seen as vital. This points to the need to improve students' use of library resources, especially for developing students' confidence in self-directed quests for reasons why theory, the action of which was experienced during the practical exercises, works as it does, and what else it might do that is useful.

Of some concern, is that both teachers and students indicated that there was a lack of equipment. It is important for educational managers to ensure that sufficient funds are available for curriculum development and supporting equipment and learning materials/resources. In relation to hand-outs it is worth noting that most students (81%) were appreciative of the hand-outs they were given.

Although the educational effectiveness of CBT was not a focus of the study, the data provide some support CBT in initial vocational courses. The advantages of CBT appear to centre on students' beliefs about the value of gaining work-related skills, teachers' ability to obtain specified learning outcomes and the resulting confidence boost that students get from successful performance of the competency tests. The test of whether CBT is effective in initial vocational education depends, ultimately, on the fit between competency as measured in the courses/subjects and competency as it is performed in the workplace.

The influences of the workplace on teaching and learning were assessed only through the views of teachers and students. There were no observations of the workplace component of courses/subjects. A particular value of the workplace component for students was the threefold benefit of gaining people skills (18%), vocational skills (32%), and confidence and self-esteem (27%). The workplace component of vocational courses should not be seen in narrow, technical skills only, terms.

Further research

Suggested research themes are as follows:

- The practical components of initial vocational courses/subjects need to transmit theory which is relevant to the acquisition of workplace competence. Evans and Butler (1992b) have shown that the technical processes entailed in the competent performance of skilled manual tasks can be modelled (see figure 2.2). Crump et al. (1997) have shown that teaching processes which meet student learning needs and preferences can also be modelled (see figure 2.1). The integration of theory within the practice components of initial vocational courses/subjects would be improved with regard to the achievement of workplace competence through curriculum research and design which integrates:
  - the requirements for performing the technical steps necessary to complete a specific, skilled task derived from the analysis the performance of experts;
  - the teaching/social processes entailed in successfully acquiring competence in that specific task in the off-the-job classroom context.

- There is a need to assess the learning outcomes of initial vocational courses/subjects in relation to the achievement of or progress toward higher Australian Standards Framework levels.

- The study has shown that a sizeable proportion of initial vocational education students (38%) do not use library resources. What are the reasons for this? Can initial vocational students be drawn into increasing their use of library resources, especially for gaining increased confidence in self-guided learning?

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Appendix A: Questionnaires

A.1 Teacher questionnaire

NATIONAL RESEARCH STUDY

LEARNING AND TEACHING IN INITIAL VOCATIONAL

EDUCATION AND TRAINING

TEACHER QUESTIONNAIRE
AND OBSERVATION CHECK LIST

This is a study of

- how students engage in learning in vocational education and training;
- current teaching practices; and
- the influences which shape learning and teaching.

The information will be used to inform teaching and learning practices in initial vocational education.

The survey is being conducted in NSW, Victoria, and South Australia. It is sponsored by the Australian National Training Authority, via the National Centre for Vocational Education Research (NCVER), 252 Kensington Rd, Leabrook, South Australia. The Principal Researchers are Marilyn Davies, TAFE, (02) 9244 5055 and Helen Nicholas, DSE, (02) 9244 5057.

You have the right not to participate in the research. If you participate the information which you provide in completing this questionnaire will be STRICTLY CONFIDENTIAL. You will not be quoted by name. You have the right to withdraw from the research at any time.

If you have any questions about the survey or how it will be analysed please contact Christine Currey, TAFE NSW (02) 9244 5035 or Gary Johnston, Department of School Education (02) 9886 7437 or Marilyn Davies.

Thank you for your cooperation

HOW DATA WILL BE COLLECTED

The research design allows

a) observation of a vocational class and separate interviews with the teacher of the class and up to three students from the class; or
b) no observation of the class but interviews with the teacher and 3–5 students from the class separately.

TEACHER QUESTIONNAIRE

1. Can you tell me about the vocational class you just taught. What was your particular approach during that lesson?
   [EXPLORE: Teachers plans/strategies for the lesson. If appropriate ask why any particular events (or unusual events) were handled they way they were handled].

2. Is there anything different from general classes and the vocational class about how the students in that class learn (referring to the class observed or the class taught).
   If YES, what is that difference?

3. From your experience and observation of initial vocational students: How do they learn best?

4. In general what determines the teaching strategies you use?

5. What have you found to be the best way to teach vocational content?

6. Has your approach to vocational teaching changed in recent times? If so, in what ways?

7. Describe what would be your best experience as a vocational teacher? Why was it the best?

8. Describe what would be your worst experience as a vocational teacher? Why was it the worst?

9. How would you describe the students' level of motivation? (*generally*)

   High ❒ Medium ❒ Low ❒

10. What differences are there among the students in the class in terms of the way they learn things?

11. How do you cater for students who have difficulty understanding tasks?

12. Are the staff involved in deciding how the course will be implemented?

13. Do you have any problems with the way the course is designed? (*the syllabus)*

14. Do you have any problems with the way the syllabus is supposed to be delivered? *(implemented)*

15. Do you think that the equipment (tools or machines) used in this course/subject is sufficient for the course you are teaching?

Yes ❒ No ❒ No response ❒

If NO what do you think is needed?

16. Does your teaching vary from the syllabus? If so, Why or How?

17. How do you keep up to date with industry developments?

18. Are you familiar with the term competency-based assessment?

19. How did you learn about it?

20. How does a competency-based approach to learning/teaching assessment affect your role as a teacher?

21. Do you think that a competency-based approach has positive benefits for students? In what way?

22. What is your opinion of this type of assessment?

23. Turning now to learning that takes place in the workplace: What are the main differences, in your view, between learning in the workplace and learning in the TAFE [DSE] classroom?

24. Can you summarise your teaching background?

- What qualifications do you hold?_____
- What courses do you teach at present?_____
- How long have you been teaching, overall?_____
- How long have you taught vocational courses?_____
- What made you decide to teach vocational courses?_____

25. Is there anything else you want to say about initial vocational courses?

OBSERVATION CHECK LIST

Describe the composition of the class
- how many males, females?
- were there any special characteristics of the class (e.g. ethnic diversity)?
- socio-economic status, any other special characteristics (students with intellectual or physical disability?)

Describe the teaching/learning episode
- what was the topic/task being taught?
- were any sub-topics included in the lesson (e.g. a separate piece of revision)
- what form of teaching was used (e.g., lecture, demonstration, etc.)

- how did the teacher handle particular events during the lesson (describe what the event was)
- was the teaching approach able to be characterised as:
  - formal or informal
  - approachable or distant
  - spontaneous or reserved
  - authoritarian or non-authoritarian
  - teacher-directed or student-centred
- what was going on among the students generally (e.g. were they attending to what was going on, or were they distracted, were some students doing different things compared to other students)
- how did the teacher handle gender interactions (who got the most attention, who got praised, who got reprimanded)
- was the teaching session focussed or fragmented in its approach
- did anything happen during the class that reveals something about students' learning approaches or teachers' teaching approach

Was there evidence of the following:

- 'bi-directionality' (students and teachers shape each other's behaviour)
- 'master–novice' relationship (in how the lesson proceeds)
- teacher relating to the (same) student level

AUSTRALIAN NATIONAL TRAINING AUTHORITY

NATIONAL RESEARCH STUDY

LEARNING AND TEACHING IN INITIAL VOCATIONAL EDUCATION AND TRAINING

QUESTIONNAIRE FOR STUDENTS

This is a study of

- how students engage in learning in vocational education and training;
- current teaching practices; and
- the influences which shape learning and teaching in vocational education and training.

The information will be used to inform teaching and learning in initial vocational education.

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The information which you provide in completing this questionnaire will be STRICTLY CONFIDENTIAL. You will not be quoted by name.

If you have any questions about the survey or how it will be analysed please contact Christine Currey, TAFE NSW or Gary Johnston, Department of School Education or Marilyn Davies.

INSTRUCTIONS
Place a tick in the appropriate box
eg.. ✓ or write comments

Thank you for your cooperation.

OFFICE USE ONLY

State: NSW ❒ Vic. ❒ SA ❒

Location name: _____ **SES** _____
(L,M,R)

Course/subject name: _____

Note to interviewer: Focus on vocational subjects, not general subjects.

1. Can you tell me why you are doing the vocational course or subject?
   PROBE: Did you choose the course/subject ❒
   or were you placed in the course? ❒

The next few questions ask about what you like and dislike about the vocational course/subject.

2. What do you like about the course/subject?
   PROBE: What is your best experience in this course/subject?

   PROBE: What is your worst experience in this course/subject?

3. Tell me about the assessment for the course. Is there anything you dislike about the way you are assessed in the course/subject?
   Dislike?
   PROBE: Is there anything you like about how the course is assessed?

4. What parts of the course/subject have you found to be hard to learn and what parts have you found easy to learn?

   Hard to learn
   Easy to learn?

5. Overall, do you like the vocational course/subject? Yes ❒ No ❒ Undecided ❒

6. Has your teacher given you any handouts/worksheets for the course/subject?

   Yes❒ No ❒
   If YES, what did the material cover?

7. Did the handouts/worksheets

   Help you to learn? ❒
   Not help you to learn? ❒
   Don't know? ❒
   If the printed material 'did not help you to learn' what is wrong with the printed material?

8. Has your teacher used any technology for example videos, computer simulations in teaching the course?

Videotape	Yes	❒	No	❒
Computer simulation	Yes	❒	No	❒
Slides	Yes	❒	No	❒
Audio	Yes	❒	No	❒
Working models	Yes	❒	No	❒

9. What do you think makes a good vocational teacher? *[NOTE TO INTERVIEWER: Do not record names of teachers]*

10. Have you ever had any vocational teachers that you don't consider to be good vocational teachers? If yes, please explain.

11. Does the teacher do anything different from other teachers to make the course/subject interesting to you? Give examples:

Yes ❒ No ❒ Don't know ❒

If YES, why?

12. Does the teacher do anything that makes learning easier or better for you? Give examples:

Yes ❒ No ❒ Don't know ❒

If YES, why?

13. Do you consider that the vocational teacher understands how **you** like to learn things?

Yes ❒ No ❒ Don't know ❒

PROBE: What do you mean?

14. Do you think that the equipment (tools or machines) used in this course/subject is sufficient for the course you are studying?

Yes ❒ No ❒ Partly 50:50 ❒

If NO what do you think is needed?

15. During your vocational course/subject have you used a library?

Yes ❒ No ❒

If YES, was it:

School library	Yes	❒	No	❒
Public library	Yes	❒	No	❒
TAFE library	Yes	❒	No	❒

16. Are there any services you believe should be provided to help you learn? If YES, what are they?

Please look at this list: (SHOW CARD)
Is there anything on the list which should be provided to help you to learn?

- ❒ Help with study skills?
- ❒ Help with language skills?
- ❒ Aboriginal support services?
- ❒ Child care facilities?
- ❒ Support for disabled students?
- ❒ Accommodation/meeting place?
- ❒ Help with motivation?

17. Think about all the courses/subjects you have done. What types of courses/subjects do you like doing the most?
    Why?

18. What courses/subjects do you dislike?
    Why?

19. Do you mostly like to work with your hands or with your head or both?
    RECORD COMMENTS MADE

Hands	Yes	❒	No	❒
Head	Yes	❒	No	❒
Both	Yes	❒		
Don't know/unsure		❒		

NOTE TO INTERVIEWER: IF NECESSARY EXPLAIN; for example, does the student prefer more practical courses or subjects or theoretical courses or subjects?

20. When you enrolled in the vocational course/subject did you have sufficient information on the career choices open to you?

Yes	❒	No	❒	No response ❒

21. Do you consider that this course/subject will help you in further study or employment?

Yes	❒
No	❒

If YES, why?

22. Do you know yet what you want to do after finishing your course?

Yes ❒ No ❒
If YES, what are you planning to do?

23. Are you currently in paid employment?

Yes ❒ No ❒

If YES, what work are you doing?

24. Is this course assisting you in the workplace?

Yes ❒
No ❒

How?

WORK PLACEMENT QUESTIONS

25. As part of your course, are you required to do work placements? [IF NO, GO TO Q.29]

Yes ❒ No ❒

26. Have you done the work placement yet?

Yes ❒ No ❒

If YES: How did learning in the workplace differ from learning at school/TAFE?

7. Can you tell me how the people in the workplace taught you what to do?

28. What did you gain as a result of the work placement?
PROBE: Personal skills gained, vocational skills gained, acceptance by fellow workers

29. Are you:
female? ❒ male? ❒ age?_____

30. Are you of Aboriginal or Torres Strait Islander descent?

Aboriginal ❒
Torres Strait Islander ❒

31. Are you receiving any financial assistance to study?

Yes ❒ No ❒

32. Is English your first language? Yes ❒ No ❒

33. Do you consider yourself to have a physical disability Yes ❒ No ❒
34. Do you consider yourself to have a learning disability Yes ❒ No ❒
35. Are you living at home or away from home?
36. At home Yes ❒
37. Away from home Yes ❒

FOR NEW SOUTH WALES Start Q38 FOR VIC Q47 FOR SA Q52

38. Are you studying for the HSC? Yes ❒ No ❒

IF NO, GO TO QUESTION 46

39. How may units are you studying for the HSC? ____ units.

40. What English course are you studying?

Related (2U)	❒	NOTE: FOR VIC, SA SURVEY
Related (3U)	❒	SUBSTITUTE EQUIVALENT
General	❒	LEVELS
Contemporary	❒	

41. What Mathematics course are you studying?

4U	❒
3U	❒
2U	❒
Maths in Society	❒
Maths in Practice	❒

42. Were the English and Mathematics subjects your first choices?
Yes ❒ No ❒
If NO, why? PROBE:

43. Did the timetabling force a choice between a vocational subject or a particular level of a general subject?

44. Have you dropped a subject since you started Year 11?

Yes ❒ No ❒
If YES, what was the subject?

Why did you drop it?

45. If you had the opportunity to choose your subjects again would you do the same vocational course?
Yes ❒ No ❒ Don't know ❒

If NO, why?

46. Do you have any other comments about the vocational course/subject or course/subjects you are doing?

47. Overall, what is your opinion of the course/subject?

Very satisfactory ❒
Satisfactory ❒
Borderline ❒
Unsatisfactory ❒
Very unsatisfactory ❒

Thank you for completing this questionnaire

FOR VICTORIA

48. Are you studying for the VCE? Yes ❒ No ❒

IF NO, GO TO Q49

49. Are you studying Mathematics? If so, from what area e.g. Maths, Science, Technology?

Note : VCE English is compulsory (Level?)

50. If you had the opportunity to choose your subjects again would you do the same vocational course?

Yes ❒ No ❒ Don't know ❒

If NO, why?

51. Do you have any other comments about the vocational course/subject or course/subjects you are doing?

52. Overall, what is your opinion of the course/subject?

Very satisfactory ❒
Satisfactory ❒
Borderline ❒
Unsatisfactory ❒
Very unsatisfactory ❒

Thank you for completing this questionnaire

FOR SOUTH AUSTRALIA

53 Did the timetabling force a choice between a vocational subject
or a particular level of a general subject? Questions about SA HSC alternatives

SA1 . If you had the opportunity to choose your subjects again would you do the same vocational course?

Yes ❒ No ❒ Don't know ❒

If NO, why?

SA2. Do you have any other comments about the vocational course/subject or course/subjects you are doing?

SA3. Overall, what is your opinion of the course/subject?

Very satisfactory	❒
Satisfactory	❒
Borderline	❒
Unsatisfactory	❒
Very unsatisfactory	❒

Thank you for completing this questionnaire

Appendix B: Placed in or chose course?

Table B.1 Placed in/chose course (Q1b)

PLACED IN COURSE	No.	%
Placed	7	6.1
Chose course	102	90.2
Missing	4	3.5
Total	**113**	**100**

NCVER

The National Centre for Vocational Education Research is Australia's primary research and development organisation in the field of vocational education and training.

NCVER undertakes and manages research programs and monitors the performance of Australia's training system.

NCVER provides a range of information aimed at improving the quality of training at all levels.

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